DOCUMENT RESUME

ED 463 072 PS 030 212

TITLE	Brazil Early Child Development: A Focus on the Impact of Preschools. Report.
INSTITUTION	World Bank, Washington, DC. Latin America and the Caribbean Region.
REPORT NO	R-22841-BR
PUB DATE	2001-09-24
NOTE	78p.; Prepared by the Human Development Department, Brazil Country Management Unit.
AVAILABLE FROM	World Bank Info Shop, 1818 H Street, N.W., MSN J1-100, Washington, DC 20433. Tel: 202-458-4500; Fax: 202-522-1500; e-mail: pic1@worldbank.org. For full text: http://www-wds.worldbank.org.
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Comparative Analysis; Developing Nations; *Early Intervention; Followup Studies; Foreign Countries; *Outcomes of Education; Poverty; *Preschool Children; *Preschool Education; Program Evaluation; Public Policy; Sex Differences
IDENTIFIERS	*Brazil

ABSTRACT

In spite of remarkable improvement over the past 20 years, there remain substantial deficits in Brazil's education levels and child health, as well as high levels of chronic grade repetition. This study examined the impact of Brazil's long established preschool as an early child development (ECD) intervention for improving the status of the poorest groups in the population. The focus of the study was on preschool, with some discussion of day care and other services for infants and toddlers. Data were obtained from the Brazilian Living Standards Measurement Survey, covering approximately 20,000 citizens in 5,000 households. Outcome measures focused on overall schooling outcome, future employment and earnings, and nutritional status. Principal findings indicated that preschool attendance had a positive and significant impact on the average years of schooling attained, there was a direct and indirect positive impact on future earnings for men only, the impact on nutritional status was relatively weak, the benefit-cost ratio was higher than that for most industrial and agricultural projects, and there was a positive effect on grade repetition. Access to preschool and day care services was related to child's age, region, and family income. Per-student spending at preschool levels is substantially lower than other educational levels. The wealthy receive a disproportionate share of public preschool and day care expenditures. Policy recommendations include strengthening preschool finances to increase enrollments and efficiency, improving preschool access to the poorest children, and combining preschool with other ECD services. (Includes details of national education plans for preschool education. Contains 91 references, 21 figures, 11 tables, and 3 boxes.) (KB)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 463 072

Report No. 22841-BR

Brazil
Early Child Development
A Focus on the Impact of Preschools

September 24, 2001

Human Development Department
Brazil Country Management Unit
Latin America and the Caribbean Region

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it
☐ Minor changes have been made to improve reproduction quality
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY HAS BEEN GRANTED BY
J. Feather
2A TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

PS 030212

Document of the World Bank

BEST COPY AVAILABLE

Currency Equivalents

Currency Unit - Real (R$)
December 1999: R$ 1.79/US$
December 2000: R$ 1.95/US$
July 2001: R$ 2.50/US$

Fiscal Year

January 1 - December 31

Vice President:	David de Ferranti
Country Management/Director:	Gobind T. Nankani
Lead Economist:	Suman Bery/Joachim von Amsberg
Sector Management/Director:	Xavier Coll
Task Manager:	Mary Eming Young

While this report has been discussed with institutions and individuals of the Brazilian Government, the views expressed in this report are exclusively those of the World Bank.

CONTENTS

Acknowledgments.....v
Abbreviations and Acronyms.....vii
Executive Summary.....ix

Chapter I: Introduction - Brazil's Development Distortions and Early Child Development.....1

I. Brazil's Development Imbalances.....1
Correlates of Disparities.....5
II. Early Child Development and Reduction in Development Imbalances.....7
International Evidence of Benefits from Early Child Development.....7
III. Scope of this Study.....9

Chapter II: Measuring the Benefits and Costs of Preschool Education.....11

I. Introduction.....11
II. The Impact of Preschool on Education Outcomes.....12
III. The Impact of Preschool on Employment and Future Earnings.....12
IV. The Impact of Preschool on Children's Nutritional Status.....14
V. Quantifying Benefits.....15
VI. Estimating Costs.....15
VII. The Returns to Investment in Preschool Education.....15
VIII. Willingness to Pay for Preschool Services.....16
IX. Conclusion.....16

Chapter III: A Profile of Preschool Education in Brazil.....17

I. Introduction.....17
II. The Prevalent Preschooling Arrangements.....17
III. Preschool Enrollment.....18
IV. At What Age Preschooling?.....19
V. Structural Dimensions of Access in Preschooling.....23
i. Regional Differences.....23
ii. The Urban–Rural Divide.....24
iii. Rich and Poor.....25
VI. Public vs. Private Provision of Preschooling.....26
VII. Mothers' Education and Demand for Preschool Education.....27
VIII. Conclusion.....28

Chapter IV: Early Childhood Education Policies and Programs.....31

I. Introduction.....31
II. History of Early Childhood Programs in Brazil.....31
III. Current Goals.....32
IV. Benefits of Lower-Cost, Nonformal Early Child Development Interventions.....32
V. Examples of Nonformal Programs.....34
i. "Criança Maravilhosa" Program.....35
ii. Programa de Alimentação de Pré-escolar.....36

VI. Nongovernmental Organizations Providing Early Child Development Services in Brazil....38
i. Pastoral da Criança....38
ii. Association Representing the Paulo Englert Movement for Popular Education....39
VII. Examples of Early Child Development Services in Other Countries....40
i. Home Visiting Model in Jamaica....40
ii. Community-based Model in Chile: Program Get to Know Your Child....41
iii. Mother Training Program in Turkey: The Turkish Early Enrichment Project....43
VIII. Conclusion....44

Chapter V: Financing Preschool and Day Care....47

I. Introduction....47
II. The Structure of Funding....47
III. Where the Money Comes From....48
IV. Cost Per Child....48
V. Where the Money Is Spent....49
VI. Inefficiencies in the System....51
VII. Inequities in the System....52
VIII. The Need for Targeting and Comparisons with Other Countries....55
IX. Conclusion....56

Bibliography....59

Tables

1 Measuring the Benefits of Preschool Education....xii
3.1 Early Enrollment by Age Group and Data Source, 1996-97....19
3.2 Early Childhood Service Rates by Age and Grade Level, PPV 1996/97....23
3.3 Enrollment by Age Group and Region, 1997....24
3.4 Enrollment of Children Ages 0-6 by Program Type, PPV 1996/97....27
4.1 Evaluating PROAPE's Returns....36
4.2 Comparing Returns from PROAPE, Casulo, Public Kindergarten, and No Preschool....38
4.3 Overall Scope of Pastoral da Criança Activities, as of the First Quarter of 1999....39
5.1 Public Spending on Early Childhood Education, 1995 (R$ Billion)....48
5.2 Public Spending on Education, 1995....49
5.3 Mean Monthly Salary of Preschool Teachers, 1997 (R$)....52

Figures

1.1 Ratio of Observed and Expected Years of Education in Latin American Countries....2
1.2 Disparity in Income by Country....3
1.3 Infant Mortality Rates, 1996: Lower- and Middle-Income Countries....4
1.4 Infant Mortality Rates by Mothers' Education Level, 1997....5
1.5 Percent of Children Younger than 5 with Stunted Growth by Mothers' Education Level....6
1.6 Proportion of Brazilian Children Ages 15-19 Years Completing School Grade....6
2.1a Increase in Future Earning Capacity for Children Whose Parents Have 4 Years of Education....13
2.1b Increase in Future Earning Capacity for Children Whose Parents Are Illiterate....14
3.1 Net Enrollment in Early Childhood Service Programs by Age, 1997....20
3.2 Net Enrollment of 2-4 Year Olds in Day Care and Preschool, 1996....21
3.3 Enrollment of 6-Year-Olds in Preschool and Primary School, 1996....22
3.4 Enrollment of 4-6 Year Olds in Early Childhood Service Programs, 1996....22
3.5 Urban and Rural Early Education Enrollment Rates for Children Ages 0-6, 1997....24
3.6 Early Education Enrollments by Per-Capita Household Income for Children Ages 0-6....25
3.7 Cumulative Proportion of 4-6 Year Olds Enrolled in Day Care or Preschool According to Per-Capita Household Expenditure, 1997....26
3.8 Children's Early Education Enrollment Rates by Mothers' Level of Education, 1997....28
5.1 Total Expenditure for Early Childhood Services, 1995 (R$ Million)....50
5.2 Distribution of Poor Children Served and State Shares of the Social Assistance Budget, 1998 (R$240 Million)....51
5.3 Cumulative Proportion of 4-6 Year Olds Enrolled in Public Institutions by Percentile of Per-Capita Household Expenditure....53
5.4 Cumulative Proportion of 4-6 Year Olds Enrolled in Private Institutions By Percentile of Per-Capita Household Expenditure....54
5.5 Public Education Spending in Chile, Colombia, Malaysia, and Brazil....55

Boxes

4.1a Brazil's National Education Plan for 1998-2008: Day Care (Ages 0-3)....33
4.1b Brazil's National Education Plan for 1998-2008: Preschool (Ages 4-6)....34
5.1 New Zealand's "Follow the Child" Plan for Early Child Development Funding....56

ACKNOWLEDGMENTS

The task team would like to acknowledge the contributions made to this sector report by all the colleagues who assisted in the preparation of this study and by participants of the Advisory Group who attended the December 1-2, 1998, and the April 19-20, 1999, workshops in Brasilia, D.F:

(i) Consultants to the World Bank: Ricardo Paes de Barros, Director, Division of Social Studies and Policy, Institute of Applied Economic Research (IPEA); Gaby Fujimoto-Gómez, Education Specialist, Organization of American States; Rosane Mendonça, Researcher, IPEA; Pierella Paci, Economist, consultant; and Ana Lúcia Saboia, Director, Division of Social Indicators, Brazilian Institute for Geography and Statistics (IBGE).

(ii) Peer Reviewers: Ricardo Morán, Senior Economist, Inter-American Development Bank (IDB); Robert Myers, formerly Director, Consultative Group on Early Child Care and Development; and Jacques van der Gaag, Dean, Faculty of Economics and Econometrics, University of Amsterdam, Netherlands, formerly Chief Economist, World Bank Human Development Network.

(iii) World Bank Staff: Jamil Salmi, Education Sector Manager, LCSHE; Indermit Gill, Lead Economist, LCSHE; Robin Horn, Education Economist, LCSHE; Maria Madalena dos Santos, Sector Leader, LCSHD; Donald Winkler, Lead Specialist, LCSHE; Guilherme Sedlacek, Senior Education Economist, LCSHE; Alberto Rodriquez, Senior Education Specialist, LCSHE; Patricio Millan, former Country Sector Leader, LCC5F; Fabiana Imperatriz, Team Assistant, LCC5C; and Chris Parel, Country Officer, LCSDS. Special thanks to Ward Heneveld, Principal Education Specialist, who first prepared the concept paper.

(iv) Advisory Group:

Government Officials (Brazil):
Ministry of Education and Sports (MEC): Iara Glória Areias Prado, Secretary of Fundamental Education (SEF); and Gisela Wajskop, Early Education Division Coordinator.
State Secretariat of Social Assistance (SEAS): Wanda Engel Aduan, Secretary of State; Maribel Peres Azevedo, Director, Department of Social Assistance Policy Development; and Rita Helena Horn, Assistant Manager, 0 to 6 Program.
Ministry of Health (MS): Maria Eugenia Pesaro; Coordinator, Child Health Program; and Célia Maria L.C. Zannon, Public Health Professor, University of Brasília, and Consultant to the MS.
State Secretariat of Education: Antenor Manoel Naspolini, State Secretary of Basic Education, Ceará.

Municipal Secretariat of Education (Brazil):
National Union of Municipal Secretaries of Education (UNDIME): Nero Aldo de Azevedo, Secretary of Education, Municipality of João Pessoa, Paraíba, and President, UNDIME Nacional; João Gualberto de Carvalho Menezes, Municipal Secretary of Education, São Paulo, São Paulo; Rute M. P. Casati and Zilma Ramos de Oliveira, representing UNDIME São Paulo; Shirley Psione, Municipal Secretary of Education, Marechal Cândido Rondon, Pará; Edi Maria Volpin, Secretary of Education, Cascavel, Pará; and Marilei L.S. Teixeira, UNDIME, Pará.

Government Research Agencies (Brazil):
IPEA: Ricardo Paes de Barros, Director, Division of Social Studies and Policy; Rosane Mendonça, Researcher; Sérgio Piola, Public Health Specialist. IBGE: Ana Lúcia Saboia, Director, Division of Social Indicators.

Representatives of Nongovernmental Organizations:
National Conference of Brazilian Bishops (CNBB), Pastoral da Criança: Dom Luciano Mendes de Almeida.
Associação Brasileira dos Fabricantes de Brinquedos (ABRINQ) Foundation for Children's Rights: Ana Maria Wilheim, Manager.
The Paulo Englert Movement for Popular Education (AMEPPE): Dinéia Aparecida Domingues, Program Coordinator.
World Organization for Pre-school Education (OMEPE), Brazil: Vital Didonet, Vice President, Latin American Region; and Rosa Emília, President, National Executive Committee.
Fundação Carlos Chagas: Fúlvia Rosemberg, Researcher.

(v) UNICEF: Garren Lumpkin, Education Project Officer.

*****

Assistance with early education data was provided by Carlos Moreno, Coordinator for Statistical Analysis, and Maruska P. de Almeida, Dissemination Manager, National Institute of Educational Studies and Research (INEP), Ministry of Education and Sports (MEC), Brazil.

Assistance with census and household survey data was provided by Carlos Caride and João Belchior, programmers, IBGE.

Abbreviations and Acronyms

ABRINQ	Associação Brasileira dos Fabricantes de Brinquedos
AMEPPE	Association Representing the Paulo Englert Movement for Popular Education
BNDES	Banco Nacional de Desenvolvimento Econômico e Social (National Bank of Economic and Social Development)
CEAPES	Centers for Education and Feeding of Preschool Children
CEFT	Children's Embedded Figures Test
CHAs	Community health aides
CLT	Consolidation of Labor Laws
CNBB	National Conference of Brazilian Bishops
CPEIP	Centro de Perfeccionamiento, Experimentación e Investigaciones Pedagógicas (Center for Pedagogical Research)
ECD	Early child development
FABS	Folhas de Acompanhamento e Avaliação das Ações Básicas de Saúde, Nutrição e Educação (Monitoring and Evaluation Information Sheets on Basic Health, Nutrition, and Education Activities)
FOSIS	Fondo de Solidaridad e Inversión Social (Solidarity and Social Investment Fund)
FUNDEF	Fund for the Development of Fundamental Education and Valorization of Teachers
GNP	Gross national product
INTEGRA	Fundación Nacional para el Desarrollo Integral de la Infancia
IBGE	Brazilian Institute for Geography and Statistics (Instituto Brasileiro de Geografia e Estatística)
IDB	Inter-American Development Bank
INAN	National Nutrition Institute (Instituto Nacional de Alimentação e Nutrição)
INEP	National Institute of Educational Studies and Research
IPEA	Institute of Applied Economic Research (Instituto de Pesquisa Econômica Aplicada)
JUNJI	Junta Nacional de Jardines Infantiles
LDB	Lei de Diretrizes e Bases da Educação Nacional
MEC	Ministry of Education and Sports (Ministério da Educação e do Desporto)
MOBRAL	Brazilian Literacy Movement
MS	Ministry of Health
NGO	Nongovernmental organization
OECD	Organization for Economic Co-operation and Development
OMEPE	World Organization for Pre-school Education
PNAD	National Household Sample Survey (Pesquisa Nacional por Amostra de Domicílios)
PPV	Brazilian Living Standards Measurement Survey (Pesquisa sobre Padrões de Vida)
PROAPE	Programa de Alimentação de Pré-escolar
PROMESA	Project for the Education, Health and the Environment Improvement (Proyecto para el Mejoramiento de la Educación, la Salud y el Ambiente)
PRONOEI	Programa No Formal de Educación Inicial
REBIDIA	Brazilian Network of Information and Documentation on Childhood and Adolescence
SEAS	State Secretariat of Social Assistance (Secretaria Estadual de Assistência Social)
SEF	Secretary of Fundamental Education
UNDIME	National Union of Municipal Secretaries of Education
UNICEF	United Nations Children's Fund

EXECUTIVE SUMMARY

Introduction

1. The government of Brazil recognizes the importance of investing in a child's early formative years. Since 1985, public day care facilities and preschools for children up to 6 years of age have been integrated into the basic education system, along with elementary and secondary schools. The 1988 constitution declared early childhood education to be a "right" and its provision a "duty of the State and family."

2. Brazil has pulled out of the economic recession of the late 1990s and has laid the basis for inflation-free growth, but substantial development imbalances still need to be redressed. For example, although the country has made remarkable improvement in the past 20 years, a substantial education deficit remains, for the average years of schooling in Brazil is 5.8 years, compared with 9.5 years in OECD countries. Only 66 percent of first graders in 1998 are expected to complete eighth grade, taking an average of 10 years to do so. Chronic repetition has a demoralizing effect on children, contributes to high dropout rates, and lowers the efficiency of the school system. Poor education outcomes, in turn, adversely affect other social indicators. The disparity between rich and poor in Brazil remains the highest in the world, as revealed by the Gini index of income distribution. Health indicators have registered improvements in recent years, but infant mortality rates and malnutrition among children is still high, compared with other countries at the same per capita income levels.

3. The removal of development imbalances will require sustained economic growth and a range of policy interventions that affect the broad structure of the economy. Many of these lie outside the scope of this study. The focus of this study is on the impact of early child development (ECD), and particularly preschool, in redressing these distortions.

4. This report focuses on preschool as an effective ECD intervention, especially for improving the status of the poorest groups in the population. Because of data limitations, the focus is primarily on preschooling, with some discussion, as data allow, of day care and other services for the younger (0-3 years) age group. Also, the report does not address important questions of access to health care, adequate nutrition, and the quality of preschool services provided, all of which are critical to an assessment of early childhood services and should be considered at a later date.

How Early Child Development Matters

5. The term "early child development" includes services designed for the physical and intellectual growth of children in their early years (ages 0-6). These services incorporate day care, preschool, home visits by trained professionals, health and nutrition services, and parental education. Key interventions early in life are seen to be small investments that yield high returns in physical, mental, and economic well-being during the life of the child and adult. Research also has shown that early interventions are especially beneficial to poor children.

6. Studies of international experience show that ECD interventions have the following benefits:

- *Improved nutrition and health*

  -- Colombia Community Childcare and Nutrition and the Bolivia Integrated Child Development projects

- *Higher intelligence scores*

  -- Jamaica's First Home Visiting Program, Colombia's Cali Project, Peru's Programa No Formal de Educación Inicial (PRONOEI), and the Turkey Project in low-income areas of Istanbul

- *Higher school enrollment*

  -- Colombia's PROMESA ECD program

- *Less grade repetition*

  -- Colombia's PROMESA ECD Program, the Alagoas and Fortaleza PROAPE study of Northeast Brazil, and the Argentina ECD study

- *Fewer dropouts*

  -- the India Dalmau program and Colombia's PROMESA program

- *Increased participation of females in the labor force*

  -- a recent study of access to free childcare in the slums (favelas) of Rio de Janeiro.

7. Substantial development literature thus suggests that a comprehensive national program of early childhood services may provide a strong weapon against poverty by building human capital, one of the best investments a country can make in its comprehensive development.

The Structure of Preschooling and Day-Care Services in Brazil

8. In 1988, day care and preschools were integrated into the basic public education system. Previously only responsible for educating children above 7 years old, the public education system now also offered free education to children ages 0-6. Since 1996, provision of elementary and early childhood education has been a municipal responsibility, and the constitution requires that at least 25 percent of the budget be spent on maintaining and developing education. Public preschools are generally staffed by government employees, and they operate on a predetermined curriculum.

9. Private institutions (including for-profit, nonprofit, and government-subsidized private institutions) play a substantial role in providing preschool and day-care services, accounting for almost 44 percent of all formal enrollments.

10. The significant demand for preschools and day care is reflected in the array of nonformal ECD services offered in the public and private sectors. Although not comprehensively documented, nonformal ECD services are estimated to be quite significant, affecting more than a million children through home visits, day-care centers, training, and literacy centers. Nonformal programs are important examples of low-cost alternatives to formal public preschools.

Access to Preschooling and Day-Care Services

11. In 1997, out of a population of 22 million children ages 0-6 years (approximately 14 percent of the total population of Brazil), about 27 percent were enrolled in day-care and preschool programs. The main structural dimensions of access are:

- *Higher enrollments among older children.* Among 4-6 year olds, 51 percent attended formal preschool programs. This is a vast improvement over preschool enrollments of only 4 percent in the 1970s. Since 15 percent of 6-year-olds were already in primary school, the overall enrollment rates (preschool and primary level) for 6-year-olds were 76 percent. Enrollments of 8 percent in the 0-3 age group were seen to be particularly low in comparison with OECD countries, but were similar to other Latin American countries.

- *Least access for children living in the Midwest, South, and North and in rural areas everywhere.* Enrollments are lower in the Midwest, South, and North compared with the Northeast and Southeast. Differences are minimal between the Northeast and the Southeast, with about 50 percent of children enrolled in preschool in each region. Three-fourths of preschool children attend urban schools. Within regions, rural–urban disparities were the largest for the Midwest and Southeast (higher urban and lower rural enrollments), and the smallest for the Northeast.

- *Least access among the poorest children.* The richest 10 percent of the population is able to send 56 percent of their children to day care and preschool, but only 24 percent of children from the poorest 40 percent attend these services. Poorer children are disproportionately represented among repeaters.

Impact of Preschooling: The Main Findings

12. The impact of preschools was empirically evaluated in research conducted by the World Bank and the Institute of Applied Economics Research (IPEA), Rio de Janeiro. Using the Brazilian Living Standards Measurement Survey [Pesquisa sobre Padrões de Vida (PPV)], which covers approximately 20,000 citizens living in 5,000 households (in urban and rural areas in the Southeast and Northeast regions of Brazil), the impact of preschooling was estimated on children's overall schooling outcomes, future employment

and earnings, and nutritional status. The principal findings, which are summarized in table 1, are as follows:

- *Preschool attendance had a positive and significant impact on the average years of schooling ultimately attained.* It was found that 1 additional year of preschool increases the schooling ultimately attained by about half a year. There is some indication of the gain being higher for children of illiterate parents. Preschooling also has a positive and statistically significant impact on the probability of completing a given series (a certain level of education by a specific age). Another finding is that the coefficient for reduced repetition rates is positive and significant, amounting to a reduction of 3-5 percentage points in grade repetition for each additional year of preschool—an important result for Brazil, where high rates of grade repetition are especially endemic.

Table 1. *Measuring the Benefits of Preschool Education*

Impact of 1 year of preschool education on:	*Estimated correlation*	*Implied reduction in development imbalances*
Average schooling attained	Strongly positive 0.45 years of education (some indication of higher attainment for poorer households) Indirect effect on income	2 years of preschool increase general schooling by about 1 year Poverty is reduced
Reduction in grade repetition	Positive Reduction of 3-5 percentage points (especially for poorer households)	Increases efficiency of education expenditures Helps to reduce gap between rich and poor
Probability of completing a given grade level by a given time	Strongly positive	Helps to reduce high dropout rate and increases efficiency of the education system
Future earnings	Moderately positive for men only 2-6 percent increase (some indication of a higher increase for poorer families)	Poverty is reduced
Health indicators	Marginally significant	Possible health improvement

- *There is a direct and indirect positive impact of preschool on future earnings.* The statistically significant result was for men's earnings—1 year of preschool attendance

results in a 2-6 percent increase in future earnings. There is also an indirect effect on income by the increase in overall level of schooling. Since 1 year of primary education is estimated to increase income by 11 percent, the combined direct and indirect effects on income of 1 year of preschool is calculated to be 7 percent.

- *There is a relatively weak impact of preschool on children's nutritional status.* Nutritional status is measured by weight for height, height for age, and weight for age. Even though preschooling appears to be positively correlated with some attributes of nutrition, some results are inconclusive, including especially the insignificance of school lunches on nutrition.

- *A benefit-cost ratio of 2 was calculated for preschool investment.* This implies a high return on investment. Most cost-benefit ratios for industrial and agricultural projects are less than 2.

- *Estimates show the willingness to pay for 1 year of preschool to be R$900 to R$1,600, which is much higher than the estimated cost of R$480 for 1 year of preschool.*

The Effectiveness of Spending on Early Child Development/Preschool Services

13. Although Brazil's preschool system is long established and, as shown above, has high returns, it does not get the same importance as other levels of education in the government's spending priorities. Per-student spending at day-care and preschool levels is substantially lower than at any other stage of education. In 1995, the total public expenditure for educating Brazilians ages 0-6 years was roughly R$450 per child per year—17 times lower per student than the amount spent on tertiary education.

14. Municipalities are responsible for about 90 percent of the direct expenses of operating preschool and day-care facilities. Since municipalities are also responsible for funding and administering elementary education, which currently receives top priority in the budget, few resources are left for ECD services. Public spending on preprimary education tends to be lower in Brazil than in other countries at similar levels of development. For example, in 1999, Argentina's per-child investment in early education was nearly double that of Brazil's. Preschool-age children in Brazil also receive the smallest share of most other kinds of educational support. Despite the fact that malnutrition is most deleterious during the early developmental years, only 13 percent of the school feeding budget in 1995 was targeted to children ages 0-6.

15. To improve the quality of education and redistribution of funds within states, the federal government initiated a scheme in 1998 [the Fund for the Development of Fundamental Education and Valorization of Teachers (FUNDEF)], which required each municipality and state to allocate at least 60 percent of its budget to improve education at the "ensino fundamental" level (grades 1 to 8). A minimum spending level of R$315 is guaranteed per year per student, and federal funds are committed to make up any local shortfalls. Because these funds are not accessible to day care and preschool education,

there is some pressure to take children out of preschool and to enroll them earlier into the elementary education system.

16. The rich receive a disproportionate share of public expenditures. About half the children attending preschool attend public facilities. Because all Brazilian children, rich and poor, have the same constitutionally mandated access to preschool education, the majority of public expenditure tends to be disproportionately concentrated in educating nonpoor children. This amounts to a substantial subsidy in providing preschool services to the better-off population. Funds need to be reallocated to children of poorer families. It is estimated that investments of R$800 to R$600 in operating costs are needed per year to close the gap in access to preschool and day-care services between the poor and nonpoor.

17. São Paulo, a wealthy state, receives a disproportionately large share of the total public expenditure on preschooling and childcare. São Paulo accounts for 75 percent of Brazil's public expenditure on early childhood services, but has only 12 percent of the 0-6 age group and an especially low proportion of the poorest households. In contrast, the poorer state of Bahia, which has approximately the same population of 0-6 year olds, receives only 3 percent of Brazil's public expenditure on early childhood services. With spending imbalances such as these, early childhood services in São Paulo inevitably are of a different quality than those in other parts of the country.

Conclusion and Policy Implications

18. Public delivery of preschool education is usually justified on four grounds: (i) parents may not have enough information about the benefits of preschool, (ii) preschools create equality of opportunity among citizens, (iii) preschooling increases the efficiency of the education system and contributes to raising labor productivity, and (iv) there are other positive externalities such as better health and nutrition. Given these social benefits, the government of Brazil plays an important role in providing preschool services. Based on this report's findings, the returns to these expenditures can be improved through the following measures:

- *Strengthening preschool finances to increase enrollments and efficiency.* Research shows that there is an impressive willingness to pay for preschooling of up to R$1,600 a year. The actual fees charged, however, undervalue the true demand. In the Northeast, for example, not-so-poor households are charged a fee of only R$50 a year. A better fee structure would be an important measure for improving the financing of preschooling without resorting to additional budgetary outlays. Other measures could include exploring and expanding informal programs, such as PROAPE, as low-cost alternatives to standard public services. The scope of public–private partnerships also should be explored.

- *Improving preschool access to the poorest Brazilian children should be a policy priority.* The government's guarantee of free preschool for every Brazilian child is a commendable commitment that needs to be made more effective through targeting. Poverty mapping within states, especially in the poorest regions of the Northeast and North, is needed to identify gaps in access to preschool. The optimal method of

delivery should then be determined, utilizing best international practice and tailoring it to local needs and conditions. Locations of preschool services should be prioritized in areas of high concentrations of the poor.

- *Combining preschool with other ECD services.* Because children ages 0-3 are mostly cared for at home, interventions for this age group may be most beneficial in connection with primary health programs and dissemination of information to parents, especially mothers. Informing poor parents about the benefits of early childhood education and preschooling is an important factor in increasing utilization of these services.

4. *Future work.* The results presented in this report are encouraging first steps toward designing a national strategy to improve preschool services and ECD in Brazil. The design of a comprehensive strategy, however, requires more investigation into the (i) quality of education, (ii) the role of private and nonformal suppliers of early education, and (iv) the impact of schemes such as FUNDEF. The results of these investigations should be combined with targeting and with low-cost financing strategies, outlined above, to develop an efficient and well-targeted preschool system.

CHAPTER I

INTRODUCTION – BRAZIL'S DEVELOPMENT DISTORTIONS AND EARLY CHILD DEVELOPMENT

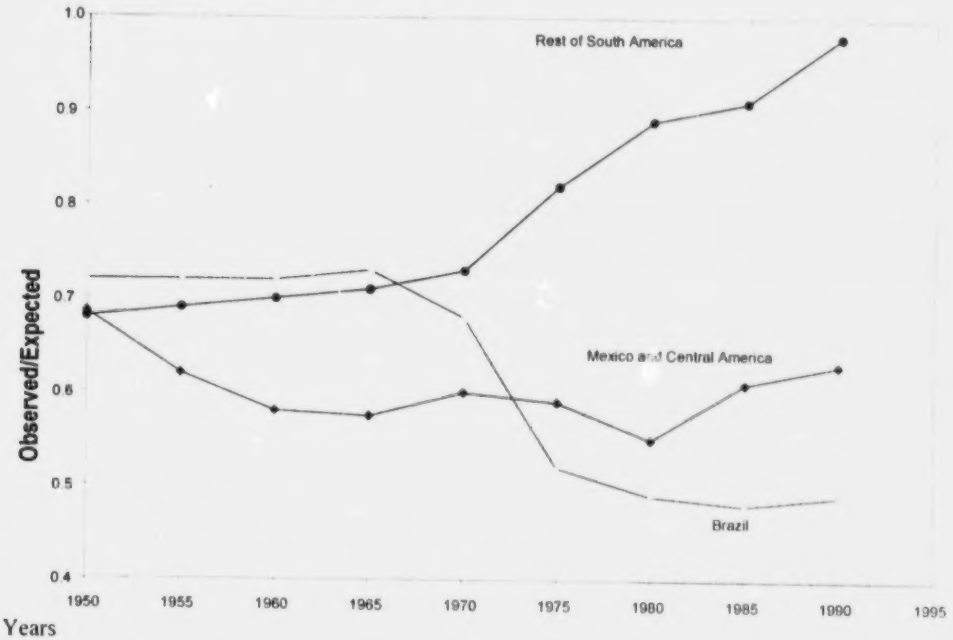
1.1 This chapter briefly summarizes (in section I) Brazil's development distortions which could be ameliorated by early childhood interventions. It then presents (in section II) salient findings from the literature that measures the benefits of early child development (ECD), in an international context, in reducing development distortions. Section III concludes the chapter by describing the structure of the rest of the report, which focuses on the main policy aspects of preschool education in Brazil.

I. Brazil's Development Imbalances

1.2 With a population of 160 million and a gross national product (GNP) per capita of US$4,720, Brazil commands an important position in the world economy. In the late 1990s, the country successfully pulled out of an economic recession and now anticipates a period of inflation-free growth. Despite these achievements, some striking development distortions remain, as described below.

1.3 A *substantial education deficit.* Although Brazil held the educational advantage during the 1950s to mid-1960s, the burgeoning school-age population placed a severe strain on the country's educational resources. The 1970s was a period of insufficient and inefficient educational investment, which severely limited the country's ability to build human capital.

Figure 1.1. *Ratio of Observed and Expected Years of Education in Latin American Countries*

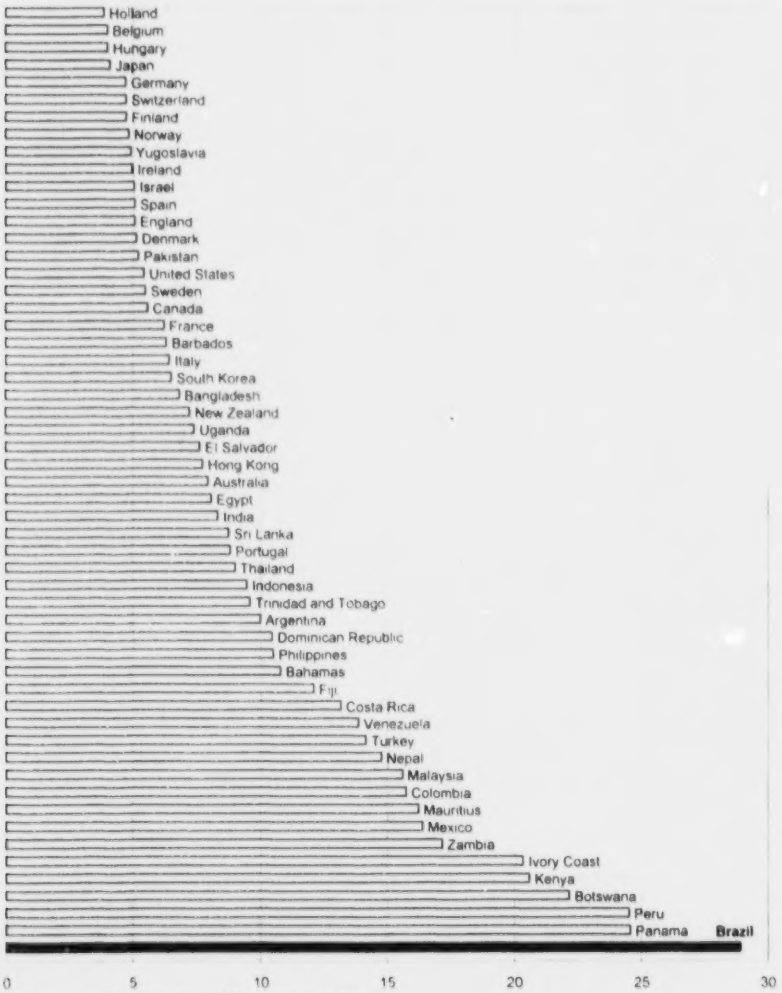


Source: Londoño 1996.

1.4 Brazilian workers today are less qualified, on average, than workers in countries at a similar level of development (see figure 1.1). As productivity becomes ever more closely tied to the global economy, Brazil's need for more highly educated workers continues to grow. Although considerable progress has been made in education in the past 20 years, Brazil still has to catch up to the average attainment levels in the Organization for Economic Co-operation and Development (OECD) countries. The average years of schooling in Brazil are 5.8 years, compared with 9.5 years in OECD countries.

1.5 *Income inequality and high incidence of poverty.* The disparity between rich and poor is greater in Brazil than in most other countries in the world. In Brazil, the mean income of the richest 10 percent is nearly 30 times that of the poorest 40 percent (World Bank 1998a). (figure 1.2).

Figure 1.2. *Disparity in Income by Country*



Source: Barros and Mendonça 1996.

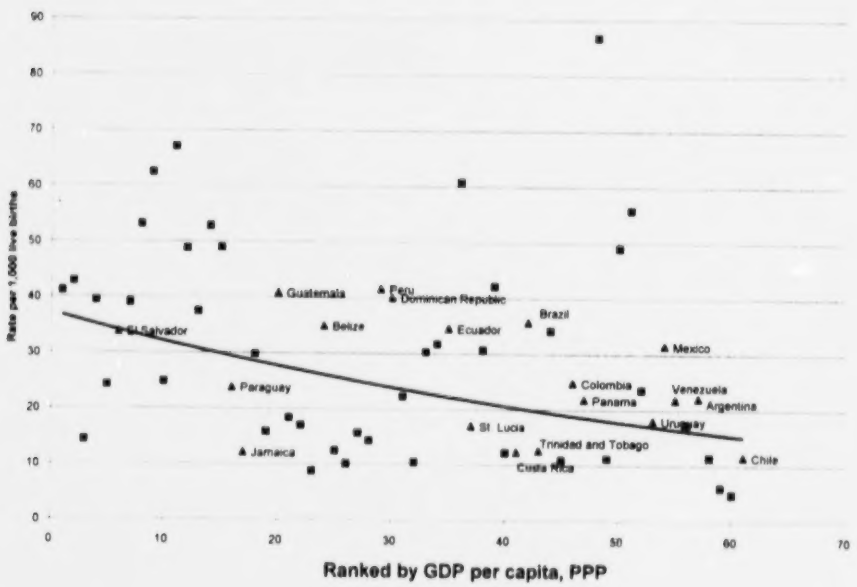
1.6 Vast economic differences exist within Brazil's 27 states. The Southeast region (with a per capita income of R$10,175) has nearly two-thirds of Brazil's population and 70 percent of its industry, but only 17.7 percent of its poor. In contrast, the Northeast region (with a per capita income of R$3,414) has nearly two-thirds of the country's poor.

1.7 *Poor health indicators.* From 1970 to 1996, Brazil registered considerable improvements in child health indicators through public health programs implemented by the Ministry of Health. The infant mortality rate was cut from 95 to 36 per 1,000 live births. The number of children dying before age 5 was reduced from 135 to 42 per 1,000, and life expectancy rose (World Bank 1998a). Despite these strides, health indicators are disturbing, especially those pertaining to children born in poor families. In comparison

BEST COPY AVAILABLE

with lower-income and upper-middle-income countries, Brazil has an infant mortality rate of 36 per 1,000, placing it on par with Albania, China, Tajikistan, El Salvador, and Iran—countries that are behind Brazil economically. Countries with development levels equivalent to Brazil's record much lower infant mortality rates: Mexico (32 per 1,000), Argentina (22 per 1,000), Colombia (25 per 1,000), Chile (12 per 1,000), and Costa Rica (12 per 1,000) (figure 1.3) (World Bank 1998b).

Figure 1.3. *Infant Mortality Rates, 1996: Lower- and Upper Middle-income Countries*



GDP = Gross domestic product. PPP = Purchasing-power parity.
Source: World Bank 1998b.

1.8 The national average of 36 per 1,000 live births fails to convey the uneven regional outcomes. For example, the infant mortality rate in the better-off South region averages 22.5 per 1,000 live births; in the Northeast region, the rate ranges from 52 per 1,000 to 82.8 per 1,000 live births.

1.9 *Malnutrition among children.* An estimated 5.7 percent of Brazilians under age 5 are malnourished. It is well documented that malnutrition from gestation to age 6 has a deleterious effect on brain development (see, for example, Martorell 1997). Noting that "ill health during childhood, caused by undernutrition, infection, or environmental toxins, can adversely affect cognitive development," Sternberg, Grigorenko, and Nokes (1997, p. 113) conclude that "delay in suitable interventions only can result in millions of children with cognitive skills that function at levels well below the children's potential."

BEST COPY AVAILABLE

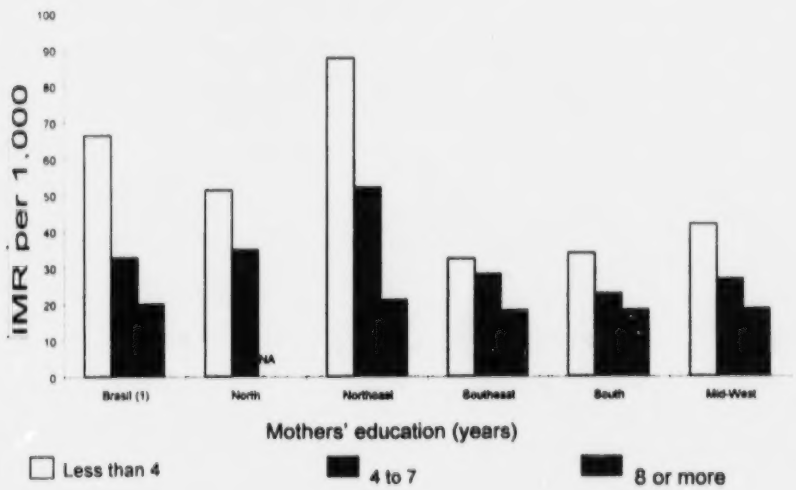
1.10 The Northeast states contain approximately one-third of Brazil's preschool-age children and have the highest percentage of families with children ages 0-6 in poverty. It is estimated that more than 60 percent of children in the Northeast region under the age of 6 live in households which consume less than R$65 a month (Paci 1999). In addition to undercutting Brazil's competitiveness abroad, inequality in education creates a gulf between rich and poor citizens which perpetuates poverty.

Correlates of Disparities

1.11 Inequalities in income and opportunity take a high toll on women. This, in turn, affects children's education and nutrition outcomes and perpetuates the cycle of poverty. This is seen in:

- Children of poorly educated mothers who are most at risk for malnutrition and for death during their first year of life (figures 1.4 and 1.5).

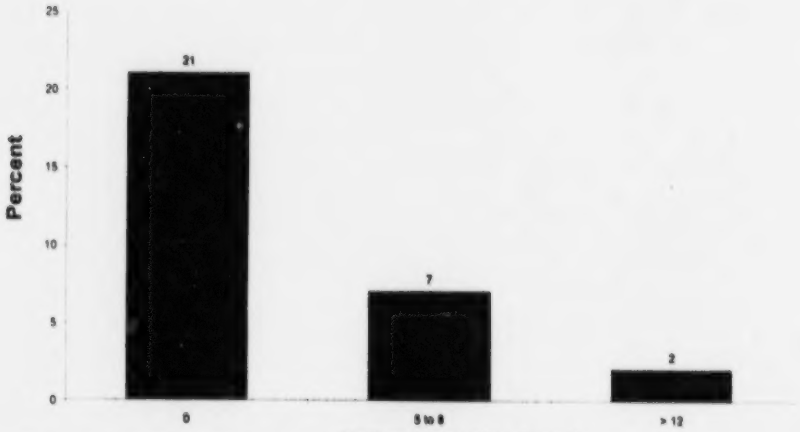
Figure 1.4. *Infant Mortality Rates by Mothers' Education Level 1997*



NA = Not available.
Source: IBGE 1999.

BEST COPY AVAILABLE

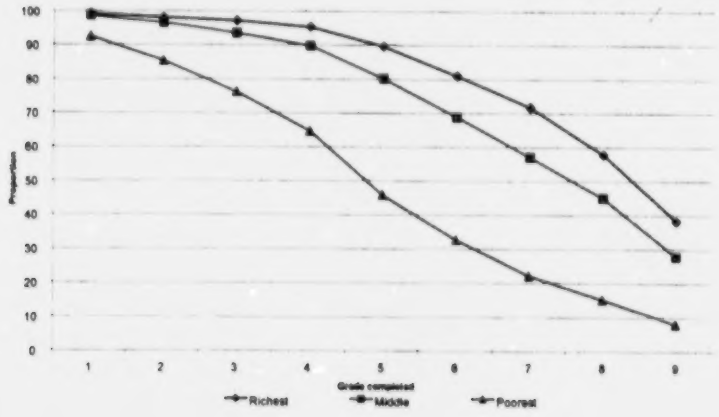
Figure 1.5. *Percent of Children Younger than 5 with Stunted Growth by Mothers' Education Level*



Percent = –2 SD of the mean.
Source: PNDS 1996.

- Another correlate of inequality, which perpetuates income differences, is the education completion rates of different income groups. Figure 1.6 shows that the poorest households have a much lower completion rate than do the richer households. Even though overall access to early childhood services has improved, the most needy (ones who would benefit the most) do not receive them adequately.

Figure 1.6. *Proportion of Brazilian Children Ages 15 – 19 Years Completing School Grade*



Source: Adapted from Filmer and Pritchett 1999.

BEST COPY AVAILABLE

II. Early Child Development and Reduction in Development Imbalances

The removal of development distortions will require sustained economic growth and a range of policy interventions that affect the broad structure of the economy. Many of these lie outside the scope of this study. The broad hypotheses offered in this introductory discussion illustrate the role early childhood interventions have in reducing some of the distortions identified above. This sets the stage for the more in-depth discussion of the social and private benefits of preschool education presented in the rest the report.

1.12 Early child development incorporates interventions in health, nutrition, and education in a child's early years (birth up to primary school). Key interventions early in life are seen to be small investments that would bring high returns in physical, mental, and economic well-being during the life of the child and adult. Therefore, ECD programs are typically beneficial by reducing infant and child mortality rates, increasing school enrollment, reducing grade repetition and dropout rates, and increasing future earning capacity.

1.13 Preschool education is an important component of ECD and usually includes children ages 4-6. The main impacts of preschool are better preparedness for entering primary school and better performance in school. The health outcomes of preschool attendance depend on the health and nutrition-related services offered in the preschool. School lunches are expected to boost children's nutritional status and to encourage attendance. The effect of a selection bias should also be noted: because malnourished children are more likely to remain at home, children attending preschool are already more fit than their peers.

International Evidence of Benefits from Early Child Development

1.14 Studies of international experience, including Myers' 1992 review of 19 Latin American ECD programs, have found that young children exposed to ECD do better in school than do children not exposed to early intervention. The main results of these programs (adapted from Young 1996) are summarized briefly below:

- *Improved nutrition and health.* ECD programs help to ensure that children receive health care, and they provide psychosocial stimulation that enhances their effect. For example, children participating in the Colombia Community Childcare and Nutrition and the Bolivia Integrated Child Development projects are required to complete their immunizations within 6 months of entering the programs. ECD programs also can monitor growth, provide food supplements and micronutrients, and help with existing public health programs.

- *Higher intelligence scores.* Early services programs encourage young children to explore, and they provide the social interaction that promotes cognitive development. On average, children who participated in Jamaica's First Home Visiting Program, Colombia's Cali Project, Peru's Programa No Formal de Educación Inicial

(PRONOEI), and the Turkey Project in low-income areas of Istanbul scored higher on intellectual aptitude tests than did nonparticipants.

- *Higher school enrollment.* Colombia's PROMESA ECD program cited significantly higher enrollment rates among the program's children.

- *Less grade repetition.* Children who participated in an ECD program repeated fewer grades and made better progress through school than did nonparticipants in similar circumstances. This held true for children in Colombia's PROMESA program, the Alagoas and Fortaleza Programa de Alimentação de Pré-escolar (PROAPE) study of Northeast Brazil, and the Argentina ECD study.

- *Fewer dropouts.* In three of four studies, dropout rates were lower for children in ECD programs. In the India Dalmau program—the only study in which attendance was measured—attendance rose by 16 percent for the program's children between the ages of 6 and 8. In Colombia's PROMESA program, third-grade enrollment rates rose by 100 percent, reflecting lower dropout and repetition rates. In addition, 60 percent of the children in the ECD program reached the fourth grade, compared with only 30 percent of the control group.

- *Increased participation of females in the labor force.* A recent study of access to free childcare in the slums (favelas) of Rio de Janeiro highlighted how access to affordable childcare frees mothers to work. Poor women who used external childcare services increased their income by as much as 20 percent. Those who paid more for private care and worked part-time earned 12-29 percent more than those using free care, probably because market-based childcare offered flexible operating hours more suited to the working mothers' needs (Deutsch 1998b). Studies in Brazil, Mexico, and Guatemala found that access to childcare also frees older siblings, usually girls, to return to school to complete their own education or to go to work (Deutsch 1998b). By all accounts, access to affordable childcare substantially increases the level of female participation in the labor force.

- Finally, when deprived of a safe, loving, and stimulating early environment, young children fail to develop language, thinking, and social skills fully (Carnegie Task Force on Meeting the Needs of Young Children 1994). By the same token, an integrated package of services—vaccinations and health care, good nutrition, a safe and nurturing environment, and intellectual stimulation—provided early in life can go far to make up for development-threatening deficits in the home (Young 1996).

For all these reasons, a large body of development literature has concluded that a comprehensive national program of early childhood services is a strong weapon against poverty, a builder of human capital, and one of the best investments a country can make in its comprehensive development.

III. Scope of this Study

1.15 This report shows systematically the results that can be expected from investing in preschool education—a vital component of early child development in Brazil. Of special interest will be the extent to which existing preschool programs benefit the poores children. This focus on preschool education as an effective ECD intervention arises fron research findings of several studies that have shown the importance of early education i redressing development distortions:

- More than three decades of research has shown that the brain develops throughout childhood. Recent findings confirm that environmental conditions during the preschool years substantially affect the growth of children's neural pathways and, therefore, how the brain's "circuitry" is wired. According to Shore (1997), the vast majority of a person's neural pathways are formed during the first 3 years of life.

- Birdsall and Sabot (1996) point out that any measure that narrows the education gap by an entire year would go far to equalize the distribution of resources in society and to bring Brazil's workforce up to the educational standard of its competitors. The estimate that Brazil's workers lag 3 years behind their international counterparts i educational attainment. By this measure, ensuring that poor children attend prescho for at least 2 years has the potential to cut Brazil's international education gap by or third.

- Early interventions are also expected to help make the current school system m more efficient. This alone would pay for part of the extra investments needed in early years. Moreover, by compensating for deficits in the home, ECD interventi allow poor children to enter school on a more equal developmental footing with t nonpoor peers, thus breaking the tenacious cycle of the intergenerational transfer of poverty. In a recent study comparing conditions among the Brazilian states, Lau others (1996) emphasized that early education benefits society as much as it d individuals. They stated that "one additional year of education per person of the la force increases real output by 20 percent."

1.16 Data limitations do not permit analysis of the equally important questions access to health care, adequate nutrition, and the quality of various types of prescho At other levels of education, poor quality of schooling is an important reason dropping out of the school system early. All these issues are critical in an assessmen early childhood service programs, but must be considered at a later date.

1.17 The remainder of the report is structured as follows: chapter II measures the returns to preschool education in Brazil based on recent research using the Brazil Living Standards Measurement Survey of 1996/97; chapter III presents a profile preschool education in Brazil; chapter IV describes preschool policies and programs Brazil; and chapter V reviews the financing of preschool and day-care services in Bra Throughout the report, implications for the poorest groups are assessed.

BEST COPY AVAILABLE

1.18 Data for this analysis derive from the National Population Census (Contagem Nacional da População 1996) (IBGE 1997a); the Ministry of Education School Census (Sinopse Estastística da Educação Básica: Censo Escolar 97) (MEC 1998c); and the National Household Sample Survey [Pesquisa Nacional por Amostra de Domicílios (PNAD)] (IBGE 1997b). In addition, the detailed data provided by the Brazilian Living Standards Measurement Survey 1996/97 [Pesquisa sobre Padrões de Vida (PPV)] (IBGE 1997c) have made it possible, for the first time, to measure early education's long-term effects. The PPV covered 19,409 citizens living in 4,940 households. Participants were located in both urban and rural communities in the Northeast and Southeast regions—highly populated areas that contain approximately two-thirds of the country's preschool-age children.

CHAPTER II

MEASURING THE BENEFITS AND COSTS OF PRESCHOOL EDUCATION

I. Introduction

2.1 Given the government's commitment and resources devoted to early childhood education, it is appropriate that the benefits be evaluated on a firm empirical basis. The recent study by the World Bank and the Institute of Applied Economic Research (IPEA) in Rio de Janeiro, Brazil, attempts to do this. Data from the Brazilian Living Standards Measurement Survey (PPV) (IBGE 1997c), conducted in 1996/97, are used to evaluate the impact of preschool education on children's nutrition, years of schooling, and future earning capacity.

2.2 The PPV covered 19,409 citizens living in 4,940 households in urban and rural areas in the Northeast and Southeast regions of Brazil. These regions are densely populated and contain almost two-thirds of the country's preschool-age children. Although such surveys provide valuable household data on the utilization of preschool services, gaps in these data affect some of the impact evaluations. For example, the PPV surveys do not include adequate information on the utilization of services by children ages 0-3; rather, the focus is on preschool attendees ages 4-6. Moreover, information on the quality of preschools is not available. This affects the evaluation results because there is substantial diversity in the quality of education offered in Brazil. Only half of Brazil's preschools are in the public sector and the remainder are privately run and include religious, not-for-profit, and for-profit schools.

2.3 This chapter summarizes and comments on the main findings of the impact of preschool education on children's (i) education outcomes, (ii) employment potential and future earnings, and (iii) nutritional status. This summary is followed by a discussion of quantifiable benefits and costs, returns to investment, and willingness to pay for early education.

2.4 In measuring the impact of preschooling on education outcomes and on employment potential and future earnings, retrospective data are used from the 1996/97 PPV survey for the cohort between the ages of 25 and 64 (IBGE 1997c). The current outcomes of this cohort are explained in terms of the preschool education received by the cohort in the past. In using retrospective data for a cohort defined over a large age range, there may be the problem of differences in the quality of preschool education received by younger and older cohorts. Extrapolating these results to the current receivers of preschool education and its impact on *their* future outcomes would also have similar problems of quality. Subtle differences in quality would be hard to resolve using retrospective data. To avoid these difficulties, the study asserts that the impact of preschooling on outcomes is the same for older and younger cohorts (within the broad age range). This is interpreted to imply that the quality of preschooling is unchanged and, thus, the impact of preschooling on future outcomes can be extrapolated from the impact on current outcomes associated with the past preschooling of the older cohort.

2.5 To evaluate the impact of early education, the internal rate of return of preschool education on service expenditures is assessed. This analysis consists of the following four steps: First, the benefits of preschool education are estimated in terms of children's future performance in school and in the labor market (earning capacity) and in terms of their nutritional status. Only benefits that can be "monetized" are selected, to ground the study and enable comparisons with costs. Second, the cost of educating a child in preschool is estimated. Third, the internal rate of return and the willingness to pay for preschool education is calculated by comparing the costs and benefits of providing the services.

II. The Impact of Preschool on Education Outcomes

2.6 To isolate the impact of preschool, control variables included personal and family characteristics as well as geographic location and day-care attendance.

2.7 The number of years of attendance at preschool has a positive and statistically significant impact on the average schooling people ultimately attain. An additional year of preschool increases schooling ultimately attained by 0.4 to 0.6 years. For families in which parents have had 4 years of schooling, children gain an additional 0.4 years of education due to attendance in preschool. For children of illiterate parents, there is some indication of a higher gain in education—0.6 years—due to preschool attendance.

2.8 There is also a positive and statistically significant effect on the probability of completing a given series. A child who has attended preschool has a greater chance of completing a certain level of education by a specific age compared with a child who has not attended preschool.

2.9 Repetition rates are lowered. Repetition rates are measured by the ratio of number of years of school attendance and schooling ultimately attained. The coefficient for reduced repetition rates is positive and significant, amounting to a reduction of 3-5 percentage points in repetition due to an additional year at preschool. The years-to-grade ratio showed that children took an average of 1.44 years to complete one grade. One year of preschool reduces this ratio by 5 percentage points. A further reduction in repetition rates due to preschool attendance was evident for children from illiterate or poorer families.

2.10 In conclusion, investment in preschool has a strong impact on additional schooling gained. Two years of preschool attendance could help to increase Brazil's average schooling level from the current 6 years to about 7 years. Another notable impact is the indirect effect on future earning capacity, which is estimated to increase by 11 percent, based on attending 2 years of preschool.

III. The Impact of Preschool on Employment and Future Earnings

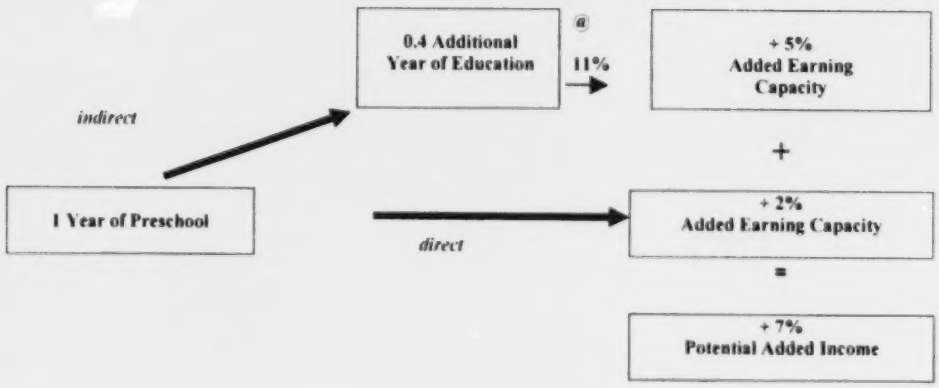
2.11 Participation in the labor force and future earnings were assessed in relation to attendance at preschool. The marginally significant result was for men's earnings—1 year

of attendance results in a 2-6 percent increase in earnings. The effect on women's income is not significant. There is, therefore, a direct positive impact of preschool on income and an indirect impact through increased overall educational achievement. One year of primary school, in general, is estimated to raise income by about 11 percent.

2.12 By combining the findings on the impact of early intervention on educational attainment with income gains associated with education, researchers were able to estimate the impact of early childhood services on future productivity.

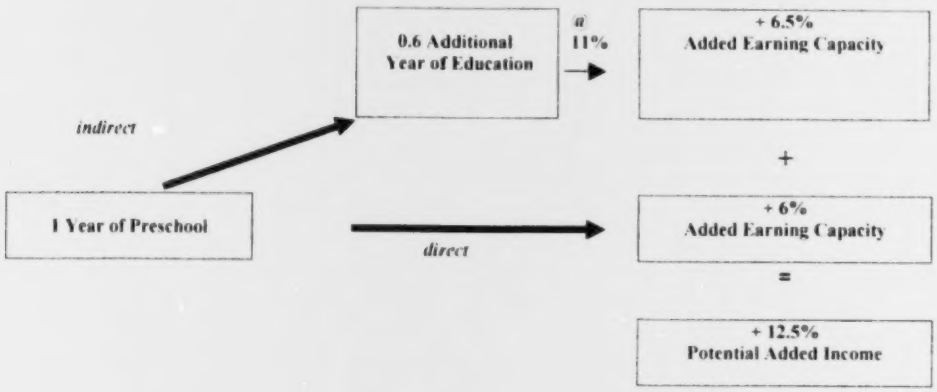
2.13 For children whose parents have 4 years of schooling, 1 year of preschool is associated with 0.45 additional years of education. Because it is estimated that 1 additional year of education increases potential earnings by 11 percent, 0.4 years more of education produce an indirect gain of 5 percent in earning power. Children who attend preschool have a direct gain of 2 percent in potential earnings (using the lowest estimate). The combined indirect and direct gains amount to a 7 percent increase in potential lifetime income (figure 2.1a).

Figure 2.1a. *Increase in Future Earning Capacity for Children Whose Parents Have 4 Years of Education*



2.14 There is some indication that the increase in earning capacity may be larger for children from families in which parents have the least schooling. Among this group, 1 year of preschool is associated with an additional 0.6 years of education and a 6 percent increase in earning capacity for children whose parents are illiterate (figure 2.1b).

Figure 2.1b. *Increase in Future Earning Capacity for Children Whose Parents Are Illiterate*



IV. The Impact of Preschool on Children's Nutritional Status

2.15 The nutritional status of children is measured by weight for age, height for age, and weight for height. Statistically significant deviations from standardized values of each of these measures are associated, respectively, with acute malnutrition, seriously stunted growth, and total malnutrition. The effect of preschool attendance on nutritional status is then estimated by running logistical regressions and determining whether attendance at preschool influences a child's ability to reach an acceptable critical level of nutrition and health, compared with children who do not attend preschool. Other determinants of nutritional status were controlled to isolate the impact of preschool.

2.16 Of the three indicators used to measure nutritional status, preschool attendance has a significant positive impact only on height for age and weight for height. The effect of preschool education on weight for age and the effect of time spent in preschool are not significant. School lunches also do not have a strong impact on children's nutritional status. Three of the control variables important in explaining better nutrition outcomes were mother's education, children who lived in the Southeast region, and female children.

2.17 There was no evidence that poorer children (identified by the group in which parents had less education) would gain more in terms of nutritional benefits by attending preschool compared with children of better-off parents (those with more schooling).

2.18 Even though preschooling appears to be positively correlated with some attributes of nutrition (i.e., it significantly reduces the probability of deviating from the accepted standards), some results are inconclusive, such as the insignificant impact of school lunches on nutrition and the lack of significant benefit for children from poor households. The data need to be examined more carefully to fully evaluate the impact of these variables.

V. Quantifying Benefits

2.19 Assigning monetary values to many of the benefits of preschool education is complicated. Often, these gains are captured in "home production," especially the better health of the family. Valuing benefits in these cases often depends on the presence of other programs and policies that can be considered substitutes for ECD or preschool programs (e.g., remedial education services) (van der Gaag and Tan 1998).

2.20 The cost-benefit analysis of preschool in Brazil includes only those benefits for which the impact can be measured in monetary terms and compared directly with costs. If education is seen to be an important investment in human capital, the higher productivity of the person receiving the education is reflected in higher earnings in the labor market. The objective is to be able to translate the benefits of preschool education into a child's expected future income. For this purpose, three types of preschool benefits are selected: the impact on schooling ultimately attained, the impact on repetition, and the direct impact of preschool education on income level. An additional year of preschool can raise income level directly through preschool and indirectly through the induced increase in further schooling. Staying longer in school also lowers future expected earnings due to postponed entry into the labor market. Reduced repetition, on the other hand, can raise income levels by earlier entry into the labor market. All these effects are taken into account in measuring benefits. Only men's earnings are included, because preschool education was not seen to significantly affect women's earnings, probably due to the informal nature of women's participation in the labor force.

VI. Estimating Costs

2.21 To arrive at unit costs of preschool education, the total public spending of R$1.9 billion (1995) on children ages 0-6 is combined with the estimated 4.4 million children in preschool in 1995. Data on spending for preschool and day care, separately, were not available. The annual public cost of providing preschool education is estimated to be R$445 per child. The private cost is calculated by including all the costs to parents (e.g., uniforms, books, transportation) and is calculated to be R$35. The total social cost of an additional year of preschool is, therefore, R$480. The estimated cost of 1 year in primary school is R$600. Educational costs will be reduced by a decline in repetition, but will increase because of the increase in schooling from the additional year of preschool education.

VII. The Returns to Investment in Preschool Education

2.22 When education is considered to be an investment in human capital, estimating the returns to this investment is of interest. The internal rate of return is the discount rate at which the present value of investment costs of preschool education equals the present value of the benefits of preschool education. The cost–benefit analysis resulted in a rate of return on preschool education of between 12.5 and 15 percent. The rate of return is 1.5 percent higher for the Southeast region and tends to be higher among whites.

VIII. Willingness to Pay for Preschool Services

2.23 The calculation of the present value of the income derived from 1 year of attending preschool can be compared with the income derived without preschool attendance. This difference indicates whether investing in preschool education is worthwhile for society. Based on a discount rate of 10 percent, the willingness to pay for 1 year of preschool is between R$900 and R$1600. The higher amounts are for children living in the Southeast region and whose fathers have more schooling. Since the cost of 1 year of preschool is estimated at R$480, the willingness to pay is demonstrated to be much higher than the cost. This indicates the feasibility of introducing fees, especially for better-off parents.

IX. Conclusion

2.24 The results of the cost–benefit analysis suggest that early intervention in the schooling of 4-6 year olds can make a difference by improving the chances of attaining higher levels of education, reducing repetition, and earning a higher income in the future.

2.25 The main impact of preschool seems to be one of better preparedness for further schooling. Therefore, investment in good-quality preschool is expected to improve the attainment and the efficiency levels of future schooling. Returns to investing in preschool education are estimated at 12-15 percent.

2.26 Although direct health-related outcomes are weak, there will be some improvement in health and nutrition indirectly through the impact of additional time gained in overall schooling through preschool attendance.

2.27 Since public preschools in Brazil are accessible to both rich and poor, the willingness-to-pay calculation is especially useful. The benefits of preschool education are seen to substantially outweigh the costs, which suggests that the charging of fees for those who can afford them is feasible (especially for parents living in the Southeast. where the returns to education are calculated to be slightly higher). Preschool could be subsidized or provided free to poor families which currently do not have access to these services.

CHAPTER III

A PROFILE OF PRESCHOOL EDUCATION IN BRAZIL

I. Introduction

3.1 The previous chapter showed that there are positive returns to preschool education in Brazil. It is natural to ask, therefore, that, given the high returns, how widespread is the use of preschool education as an instrument of early child development. This chapter attempts to answer this question by presenting a multidimensional profile of preschooling in Brazil.

3.2 Section II presents the administrative context for the existing preschooling arrangement. Section III reconciles different data sources to estimate enrollment in preschools. Section IV discusses the age at which preschooling is available, an important consideration if preschooling is to be an effective instrument of early child development. Section IV presents the important structural dimensions of access to preschooling (regional, urban–rural, and income differences), which would have an impact on the development distortions discussed in chapter I. Section VI discusses the current mode (public/private) of providing preschool education. Section VII presents evidence on the correlation between mothers' education and demand for preschooling, to draw implications for the design of a preschooling program. Section VIII concludes the chapter.

II. The Prevalent Preschooling Arrangements

3.3 Brazil's national education system is divided into basic (preschool through secondary) and postsecondary levels. Under the current system, the federal government is in charge of legislating national education guidelines and standards, coordinating the national education plan, and providing technical and financial aid to the states and municipalities. New guidelines on curriculum, accreditation, and operation of early education centers were issued by the Ministry of Education and Sports (MEC) in 1998 (MEC 1998b).

3.4 According to the 1996 National Population Census (IBGE 1997a), the 0-6 age group accounted for approximately 14 percent of Brazil's total population, or more than 22 million citizens. More than two-thirds of Brazil's young children are concentrated in the Northeast and Southeast regions, and three-fourths live in urban areas.

3.5 Public services in Brazil for children younger than age 7 divide into day-care centers (crèches) for children up to age 3, preschools (pré-escolas) for children ages 4-6, and a preparatory class for children to enter first grade (classe de alfabetização). In 1999, the official age for entering primary school in Brazil was age 7. Beginning in 1996, however, the Lei de Diretrizes e Bases a Educação Nacional (LDB) (Law No. 9393) states that the enrollment of 6-year-olds in primary school is optional (Article 87, Section 30-1). In 1997, the National Household Sample Survey (PNAD) (IBGE 1997b) reported

that 531,790 children, or 17 percent of preschool-age children, mostly 6-year-olds, were already enrolled in primary school. However, because the official age for starting primary school is age 7, this discussion covers all children from birth through age 6.

3.6 In 1996, responsibility for providing all preschool services was transferred to the municipal level (Guidelines for National Education, Article 30) (Fujimoto-Gómez 1999), and the classes de alfabetização were discontinued. As of 1997, most municipalities offered some type of locally operated ECD program for children ages 3 or less. According to the PNAD (IBGE 1997b), 4,694,027 of Brazil's 9,285,084 children ages 4-6—approximately 51 percent of the cohort—were enrolled in day care or preschool.

3.7 Brazil's public preschools are generally state-supported centers staffed by government employees. Designed according to the European model, the centers operate on a set schedule in standard school facilities. Although the government's goal is to staff them with university-trained caregivers familiar with the latest ECD techniques, this goal has yet to be realized.

III. Preschool Enrollment

3.8 The task of coming up with an accurate head count of preschool enrollment is complicated by the differing methodologies used in recent large surveys (Rosemberg 1999). The 1997 School Census (MEC 1998c) counted enrollments in preschools registered with the MEC. The 1996 National Population Census (IBGE 1997a) did not record school attendance for children below age 4. The failure of both surveys to collect data on day care almost certainly resulted in an undercount. The Brazilian Living Standards Measurement Survey (PPV) (IBGE 1997c) was limited to the Northeast and Southeast regions, and the PNAD (IBGE 1997b) grouped day care and preschool together and did not cover most of the rural area of the Northern states. The available data are also incomplete for many of the less-formal public and private providers who deliver services to Brazil's preschool-age children in homes, day-care centers, preschools, and literacy programs.

3.9 The day-care enrollment picture for children from birth through age 3 is even less clear. In 1996, Brazil mandated the integration of day-care centers into the national education system by 1999, yet data on formal day-care programs remain scattered among several government agencies, and data on nonformal programs are confined to a few pilot studies. Since 1996, however, the MEC has begun to register and accredit day-care programs and collect data on enrollments. In addition, since 1997, MEC's annual School Census has collected enrollment data from the few day-care centers linked to regular school establishments.

3.10 Given these methodological differences and reporting difficulties, it is not surprising that the major population surveys on which this report relies—including the PNAD and the PPV—have produced disparate accounts of Brazil's day-care and preschool enrollments (table 3.1). For this reason, figures from several different sources are included wherever possible.

Table 3.1. *Early Enrollment by Age Group and Data Source, 1996-97*

Data source	Service program	Children enrolled						
		Ages 0-3		Ages 4-6		Ages 0-6		
		Number (millions)	% of Age group	Number (millions)	% of Age group	Number (millions)	% of Age group	Total (millions)
PNAD 97 [a]	Day care or preschool	9.6	8	4.7	51	5.7	27	6.7
PPV 96/97 [b]	Day care and preschool	6.2	7	3.0	50	3.6	25	4.7
Population census 96 [c]	Preschool	-	-	4.3	45	-	-	5.1
School census 96 [d]	Preschool and CA*	27.2	2	4.0	42	4.3	20	5.7

a. Excludes rural areas of the northern states of Rondônia, Acre, Amazonas, Roraima, Pará, and Amapá (IBGE 1997b).
b. Northeast and Southeast regions only (IBGE 1997c).
c. Excludes children less than 5 years old (IBGE 1997a).
d. Formal preschools registered with the MEC (MEC 1998c).
* CA: Classe de alfabetização, a special preparatory class (now discontinued) for disadvantaged 6-year-olds and some older children to enter primary school. In 1996, 481,179 children younger than age 7 were enrolled in this program.

3.11 The 1997 PNAD (IBGE 1997b) reported 5.7 million children ages 0-6 in day care or preschool, indicating an average net early enrollment rate of 27 percent. Another 1 million children older than age 6 were attending day care or preschool, which brings Brazil's 1997 estimated gross, national early enrollment rate to 32 percent. (The academic year in Brazil starts in February or March, and children must be 7 years old by July 31 to enter primary school; therefore, some 7-year-olds would still be in preschool because their date of birth did not qualify them to enter primary school in the year the survey was conducted.)

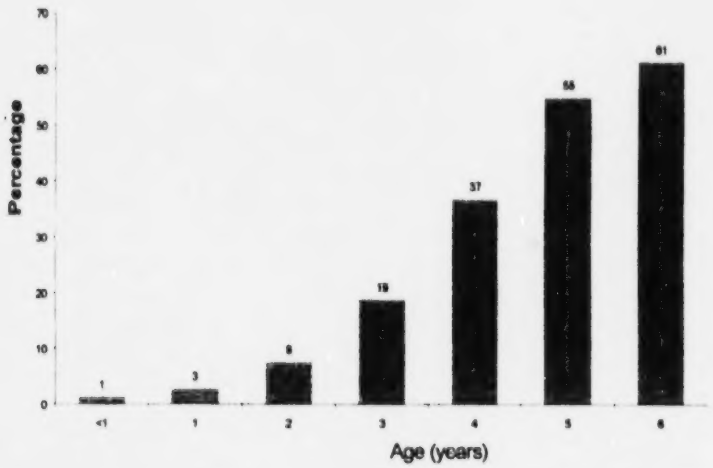
IV. At What Age Preschooling?

3.12 As noted, the 1997 PNAD (IBGE 1997b) calculates coverage for early childhood education services in Brazil at 27 percent of the eligible-age population. Boys and girls are enrolled at similar rates, but enrollment varies considerably by children's age, region, family income, parental education, and community location (urban or rural).

3.13 Brazil's gap in preschool education is widest for children younger than age 5. More than half of all 5-6 year olds go to day care or preschool, but only 37 percent of 4-

year-olds are enrolled in an early childhood education program, and enrollment rates drop far lower for children younger than age 4 (figure 3.1).

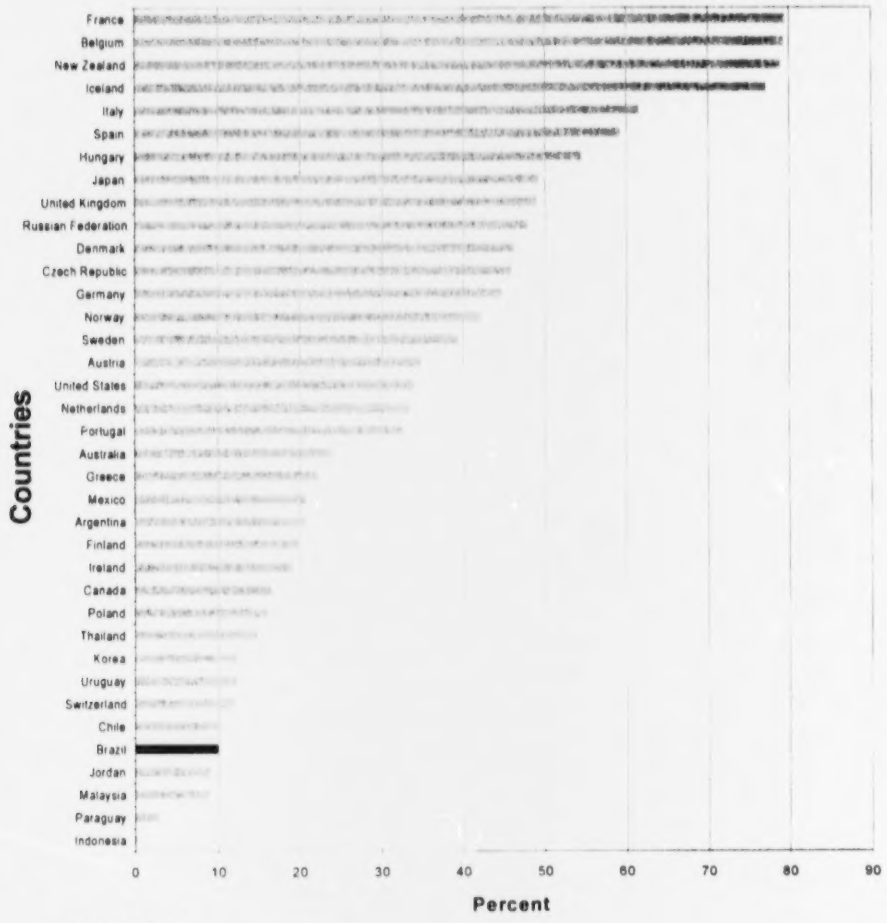
Figure 3.1. *Net Enrollment in Early Childhood Service Programs by Age, 1997*



Source: Calculated using data from the National Household Sample Survey (PNAD) (IBGE 1997b).

3.14 Brazil's enrollment rate of 10 percent for children ages 2-4 (figure 3.2) falls short of rates achieved in Germany (45 percent), the United States (49 percent), and France (80 percent), but is roughly comparable with rates in Malaysia (9 percent), Chile (10 percent), and Uruguay (12 percent).

Figure 3.2. *Net Enrollment of 2-4 Year Olds in Day Care and Preschool, 1996*

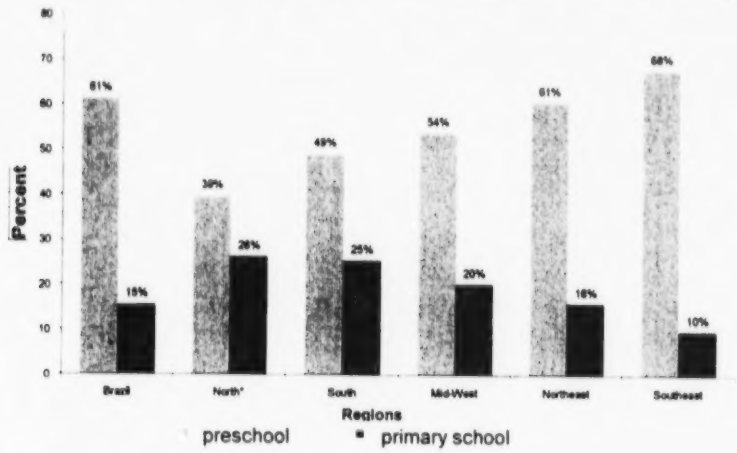


Source: OECD 1998.

3.15 At the other end of the preschool spectrum, 6-year-olds in Brazil frequently enter primary school before the official entry age of 7. In 1996, in the South and North regions, roughly one-fourth of all children age 6 were already in primary school and, therefore, were not included in the head count of preschool enrollment. When early entrants into primary school are factored into the equation, the school coverage rate in the South for 6-year-olds increases from 49 percent to almost 75 percent (figure 3.3).

BEST COPY AVAILABLE

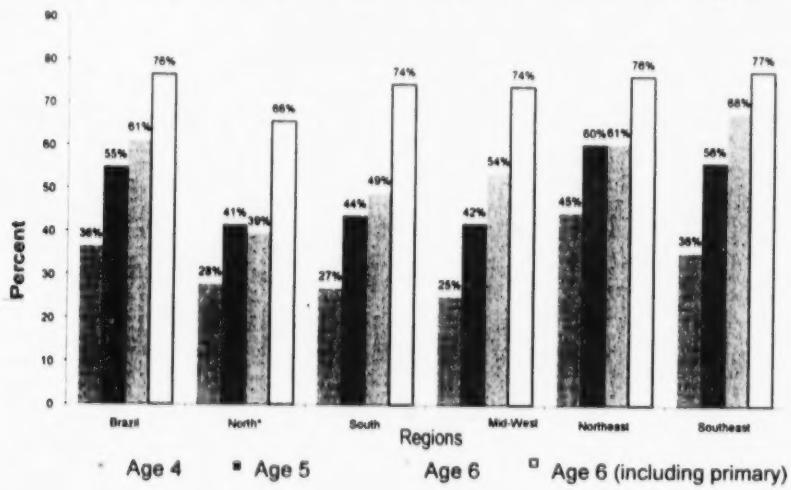
Figure 3.3. *Enrollment of 6-Year-Olds in Preschool and Primary School, 1996*



* Calculated using the 1996 National Population Census (IBGE 1997a).
Source: Calculated using data from the National Household Sample Survey (PNAD) (IBGE 1997b.)

3.16 In contrast, because few 4-5 year-olds enter primary school early, this phenomenon has virtually no effect on younger age groups. Enrollments in the South, Midwest, and North regions continue to lag far behind those in the Southeast and Northeast. Although 45 percent of 4-year-olds in the Northeast go to day care or preschool, only 25 percent of this age group attend in the Midwest (figure 3.4).

Figure 3.4. *Enrollment of 4-6 Year Olds in Early Childhood Service Programs, 1996*



* Calculated using the 1996 National Population Census (IBGE 1997a).
Source: Calculated using data from the National Household Sample Survey (PNAD) (IBGE 1997b.)

3.17 Only the PPV (1996/97) survey (IBGE 1997c), which was limited to the Northeast and Southeast regions, provides data on day-care enrollments; the PNAD (IBGE 1997b) did not distinguish between day care and preschool in the collection of data on preschool enrollment. According to the 1996/97 PPV (IBGE 1997c), only 1 percent of Brazilian children ages 1 year or less attended day care. Enrollment rates for all children younger than age 3 were low, averaging only 6-8 percent for 2-3 year-olds and declining to 2 percent for 6-year olds. Researchers have suggested that many respondents to the PPV may have viewed "crèche," the word used for day care on the questionnaire, as referring to welfare services for poor and disadvantaged children and may have used "preschool" to describe all services targeted to children under age 4. Such a reporting bias could have resulted in the low incidence of day-care (crèche) use reported and the similar proportion of children ages 0-3 in day care (4 percent) and preschool (3 percent) (Rosemberg 1999).

3.18 As for the proportion of children in preschool, there is an increase with age from 2 percent to 57 percent between the ages of 2 and 6 years (table 3.2). In addition, 1 percent of 5-year-olds and 17 percent of 6-year-olds in the PPV sample were enrolled in primary schools.

Table 3.2. *Early Childhood Service Rates by Age and Grade Level, PPV 1996/97*

Age	*Day care (%)*	*Preschool (%)*	*Day care or Preschool (%)*
0	1	0	1
1	1	0	1
2	7	2	9
3	8	11	19
4	8	28	36
5	5	51	56
6	2	58	60
Age group			
0 to 3	4	3	7
4 to 6	5	45	50
0 to 6	5	21	25

Source: IPEA 1999.

V. Structural Dimensions of Access in Preschooling

(i) Regional Differences

3.19 Enrollments were highest in the Northeast and Southeast regions. Regional estimates for the 0-6 age group vary from 20 percent in the Midwest to 29 percent in the Northeast. For preschooling also, the largest regions, the Northeast and Southeast, have the highest enrollments (table 3.3), at about 50 percent in both regions for the 4-6 age group.

Table 3.3. *Enrollment by Age Group and Region*, 1997

Region	Children enrolled					
	Ages 0-3		Ages 4-6		Ages 0-6	
	Number (millions)	% of Age group	Number (millions)	% of Age group	Number (millions)	% of Age group
Brazil	9.6	8	4.7	51	5.7	27
North [a]	3.9	5	2.8	51	3.2	25
Northeast	3.1	8	1.7	55	2.0	29
Southeast	4.1	9	1.9	53	2.3	28
South	1.6	9	5.7	40	7.3	22
Midwest	4.7	5	2.6	40	3.0	20

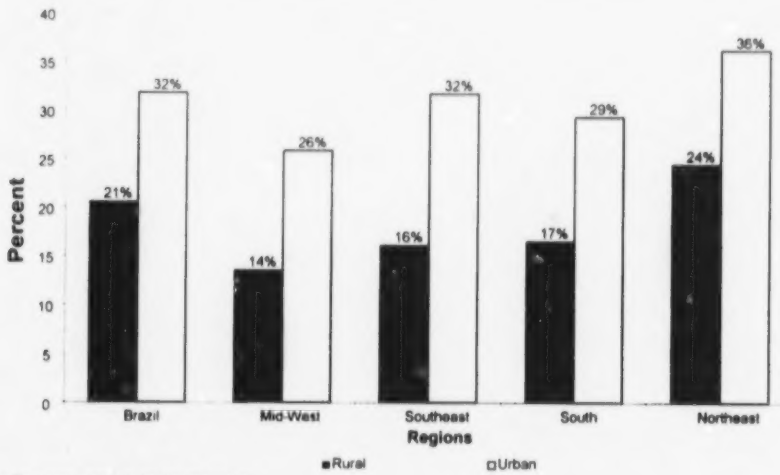
a. Excludes rural areas of the northern states of Rondônia, Acre, Amazonas, Roraima, Pará, and Amapá.

Source: Calculated using data from the National Household Sample Survey (PNAD) (IBGE 1997b).

(ii) The Urban–Rural Divide

3.20 Urban children in Brazil, who represent three-fourths of the preschool-age group, are more likely to use early childhood services than their rural counterparts. The 1997 PNAD survey (IBGE 1997b) found that 36 percent of children ages 0-6 attended day care or preschool in the cities of the Northeast, compared with 14 percent (the lowest recorded in the survey) in the rural Midwest. The rural–urban enrollment gap is largest in the Southeast region, followed by the Midwest, South, and Northeast regions (figure 3.5).

Figure 3.5. *Urban and Rural Early Education Enrollment Rates for Children Ages 0-6, 1997*



* Data unavailable for North region

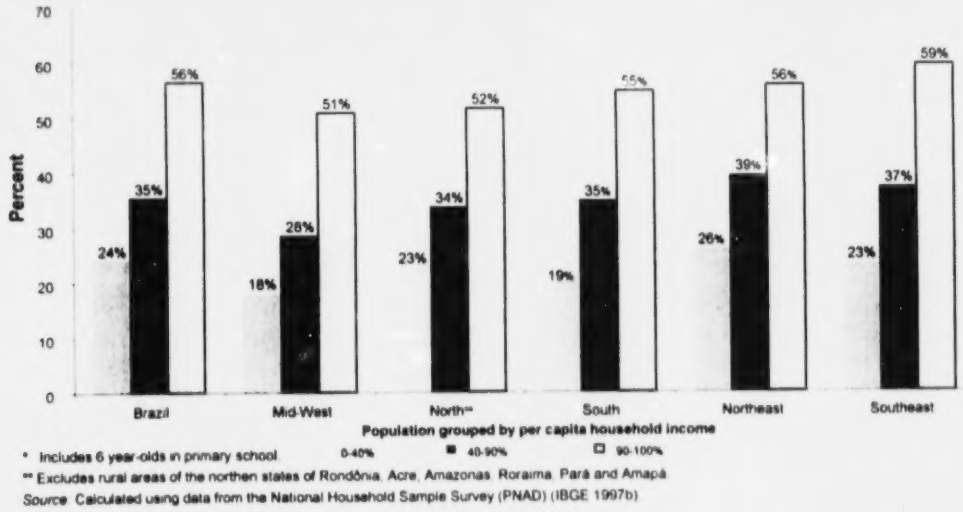
** Factoring in 6 year-olds in primary school

Source: Calculated using data from the National Household Sample Survey (PNAD) (IBGE 1997b).

(iii) Rich and Poor

3.21 High national averages mask the fact that poor children in Brazil have relatively little access to childcare or preschool services in their early years. The average enrollment rate for children ages 0-6 from the richest 10 percent of the population is more than double that for children of the same ages from the poorest 40 percent of the population (figure 3.6).

Figure 3.6. *Early Education Enrollments by Per-Capita Household Income for Children Ages 0-6*



* Includes 6 year-olds in primary school

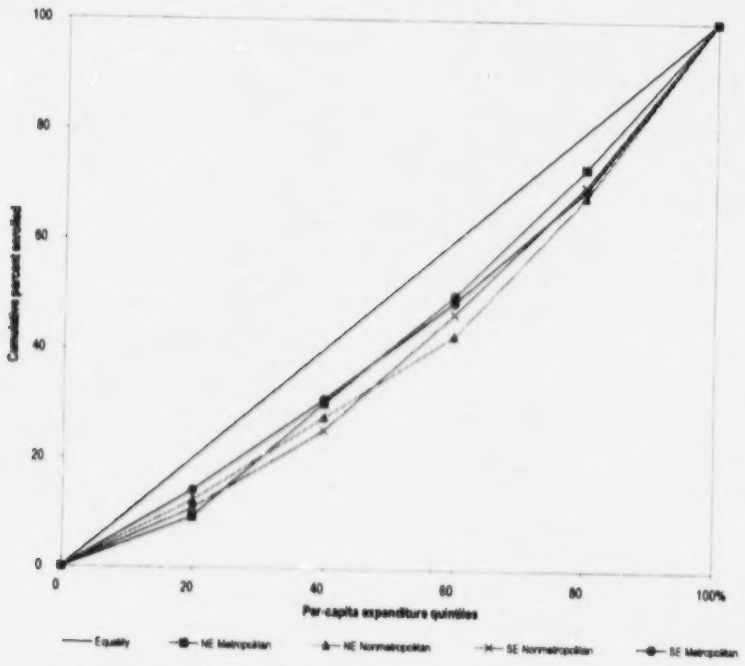
** Excludes rural areas of the northen states of Rondônia, Acre, Amazonas, Roraima, Pará and Amapá

Source: Calculated using data from the National Household Sample Survey (PNAD) (IBGE 1997b).

3.22 The 1996/97 PPV survey (IBGE 1997c) confirmed the inequitable distribution of early childhood services between rich and poor children. In the sample, approximately 30 in 100 children ages 0-3 from families in the top 10 percent of the income distribution attended day care, whereas only 3 in 100 children from families in the bottom 10 percent made use of these services.

3.23 Poor 4-6 year-olds also had a disproportionate share of early childhood education services. According to estimates by Paci (1999), children from the 40 percent of poorest families, ranked by household expenditure per capita, represented less than a third of the children enrolled in day care or preschool (figure 3.7).

Figure 3.7. *Cumulative Proportion of 4-6 Year Olds Enrolled in Day Care or Preschool According to Per-Capita Household Expenditure, 1997*



Source: Paci 1999.

VI. Public versus Private Provision of Preschooling

3.24 Of the 27 percent of children attending day care or preschool, a little more than half attend public facilities. The rest are enrolled in private schools, which may be nonprofit or for-profit institutions. In addition, there are a variety of community-based, nongovernmental, or religious organizations that effectively deliver nonformal early childhood education. The information on nonformal day-care or preschool activities is not included in national surveys. Case studies of selected nonformal programs are given in chapter IV.

3.25 Day-care centers (crèches) for younger children are run and sponsored by the municipal government and various other public and private agencies. Demand for preschool services in excess of those provided publicly has given rise to programs funded and run by a host of for profit and nonprofit private providers.

3.26 According to the PPV survey (IBGE 1997c), 10.7 percent of children ages 0-6 were enrolled in a private institution (table 3.4), representing 44 percent of all children enrolled in any type of early education program. (The PPV did not distinguish among for-profit, nonprofit, and government-subsidized private institutions). According to a 1998 study based on the PPV 1996/97 survey, the average duration of stay for children in

either public or private preschools is approximately 4 hours per day (Kramer and Kappel 1998). Although children attending private day care also average 4 hours per day in the center, the average stay of children in public day care is much longer—approximately 7 hours per day (Kramer and Kappel 1998).

Table 3.4. *Enrollment of Children Ages 0-6 by Program Type, PPV 1996/97*

Early education program	*Type of school*	
	Private (% of Children ages 0-6)	*Public* (% of Children ages 0-6)
Day care or preschool	10.7	14.3
Preschool	8.9	11.6
Day care	1.8	2.7
Total	25 percent of all preschool-age children	

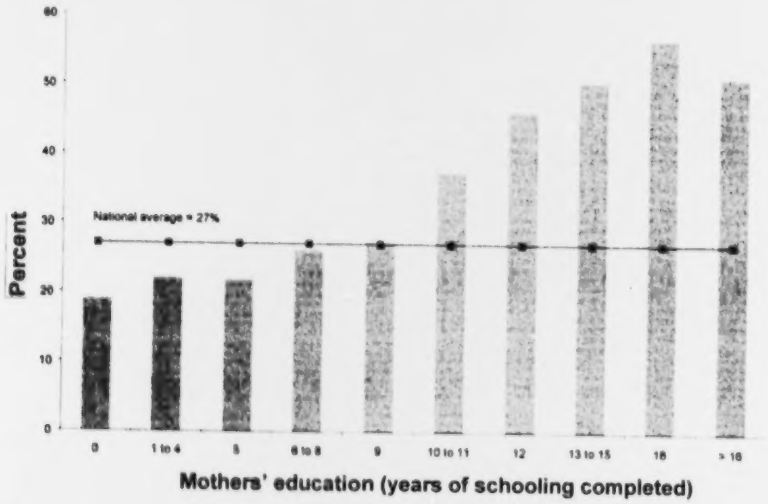
Source: IPEA 1999.

3.27 In sum, in 1997, some 6 million Brazilian children under the age of 7 were enrolled in day-care or preschool programs, and another half-million preschool-age children were already enrolled in primary school. Approximately 56 percent of the children enrolled attended public programs.

VII. Mothers' Education and Demand for Preschool Education

3.28 Rates of participation in early childhood services are affected by mothers' level of education. More than half of all children whose mothers have 16 or more years of education attend day care or preschool in Brazil, whereas less than one-fifth of children whose mothers are uneducated are enrolled (figure 3.8).

Figure 3.8. *Children's Early Education Enrollment Rates by Mothers' Level of Education, 1997*



Source: Calculated using data from the National Household Sample Survey (PNAD) (IBGE 1997b).

3.29 The probability of attending day care or preschool was estimated based on a logistic regression that controlled for the following variables:

- Personal characteristics of the child (sex, age, race)
- Characteristics of the family (parents' education, per capita income, age composition)
- Geographic location
- Mother's position in the labor market
- Supply of day-care and preschool services in the area.

3.30 Mothers' level of schooling was a strong predictor for early education—3-5 times stronger than father's level of schooling. The magnitude of the effect of income was small, but statistically significant. Yet, mothers' position in the labor market did not appear to influence use of day-care or preschool services. There was a strong indication that availability of such services had a greater influence on enrollment rates than did mothers' work status (IPEA 1999). When income and parents' schooling were controlled for, early enrollment showed no difference based on race alone (IPEA 1999). Gender also played no significant role in day-care or preschool attendance.

VII. Conclusion

3.31 Preschool services in Brazil disproportionately serve children who are older and richer, live in urban areas, and have better-educated parents. For Brazil to achieve greater equity, more focus is needed on bringing early childhood services to children who do not fit into these favored categories. This will mean collecting more detailed information

about the poorest groups. More detailed data at the municipality level are required to identify target groups. Resources and effort can then be concentrated to improve these groups' access to day-care and preschool services. As seen in this chapter, a special effort has to be made to reach children in rural areas; to design and make new programs available to younger children; and to raise awareness among less-educated parents, especially mothers, of the importance of early child development.

CHAPTER IV

EARLY CHILDHOOD EDUCATION POLICIES AND PROGRAMS

I. Introduction

4.1 This chapter reviews past and present ECD policies in Brazil, the benefits of nonformal ECD interventions, case studies of nonformal programs and of ECD services by nongovernmental organizations (NGOs), and examples of ECD services in other countries. The institutionalization of day-care and preschool education in Brazil 100 hundred years ago points to the recognition and demand for these services in Brazil. The country's current education policy, however, despite having ambitious long-term goals in early childhood education, gives highest priority to improving the access, efficiency, and quality of the elementary school system, beginning in the first grade. Given insufficient government resources, therefore, it is feasible to examine the role of alternative nonformal and NGO systems that can help strengthen, or act as substitutes for, traditional preschools and day-care centers.

4.2 Evaluations of successfully targeted nonformal ECD programs and NGO programs also show a cost advantage compared with formal programs. These findings suggest that taking a new look at Brazil's early education policy, which favors center-based early childhood services to the exclusion of other models, is of value.

II. History of Early Childhood Programs in Brazil

4.3 Formal programs for the care and education of preschool-age children date to the opening of the first kindergarten in Brazil in 1875. The 1930s saw the initiation of formal day-care centers for children ages 4 and younger, and each decade since has brought significant new developments in early childcare. In 1942, the government passed a law [the Consolidation of Labor Laws (CLT)] which required certain companies to provide day care for employees' children. In 1961, regulations were set forth [the Lei de Diretrizes e Bases da Educação Nacional (LDB)] for the operation of kindergartens. In 1976, kindergartens were incorporated into the public primary school curriculum. A national literacy program, the Brazilian Literacy Movement (MOBRAL), began targeting preschool programs to 4-6 year olds in poor areas in 1980. And, in 1985, the government established a two-tier system consisting of day-care centers serving children younger than age 4 and municipal education centers serving children ages 4-6.

4.4 In addition to these institutional changes, there has been a considerable warming over the years in Brazilians' attitude toward early childhood services outside the home. In the 1970s, preschool was largely seen as a custodial service for abandoned children or a rarefied prerogative of the rich. Serving only small niche populations, preschools accounted for only 4 percent of all Brazilian children of eligible age.

4.5 By 1988, however, the idea had become so widely accepted in Brazil that the Federal Constitution cited early childhood education as a "right" and its provision as "the duty of the State and the family" (Brazil 1988). The Constitution of 1988 also introduced a series of fundamental changes in the Brazilian education system, especially regarding programs for young children. Early childhood education was integrated into the basic education level, together with elementary and secondary education. Consequently, the public system became responsible for extending its mandatory role of offering elementary education to children age 7 and older to offering education services to children from birth to 6 years of age. "The duty of the State toward education," the Constitution concludes, "shall be fulfilled by ensuring...assistance to children of 0-6 years of age in day-care centers and preschools" (Article 208, IV). Children's right to early childhood education was reaffirmed by the 1990 Statute on Children and Adolescents and redefined in the 1996 law for establishing the guidelines for national education (LDB) (Fujimoto-Gómez 1999).

III. Current Goals

4.6 In Brazil's most recent National Plan for Education (1998-2008), the first priority is better-quality elementary education for children ages 7-14. Education of adults deprived of basic learning during childhood ranks second. Early childhood services are a distant third. Although the country's emphasis on expanding and improving primary education has left few resources for early intervention, Brazil's policymakers, recognizing the importance of improving children's lives in their earliest years, have set ambitious goals for preschools. The plan is summarized in boxes 4.1a and 4.1b.

IV. Benefits of Lower-Cost, Nonformal Early Child Development Interventions

4.7 Various studies show that local cultural, social, political, and economic conditions vary so greatly between and within countries that no single approach for providing early childcare and education can be promoted universally (Olmsted and Weikart 1999). In most countries, different types of formal and nonformal programs often coexist side by side. The rest of this chapter focuses on the type of early childhood programs that have been successful in Brazil and other countries and presents case studies of specific programs.

4.8 A frequently asked question is whether nonformal programs in developing countries are effective in promoting child development. As the results from some of the studies below show [e.g., the Programa de Alimentação de Pré-escolar (PROAPE)], nonformal early childhood programs can be highly cost-effective. Flexible in format and less expensive to administer than formal kindergarten, nonformal programs can bring about multiple benefits. If used to improve mothers' parenting skills, they can benefit younger siblings as well as the children targeted. Nonformal ECD programs generally spring up to suit communities' individual needs and facilities and come in a variety of formats, such as home-based day-care programs, community kindergartens run by mothers, or lessons delivered over the radio. Nonformal programs are generally run by trained paraprofessionals with heavy assistance from participating mothers. Many programs provide primarily full-day custodial care of up to 40 hours per child per week.

Finally, by bringing ECD services to the home, nonformal programs give many children who would otherwise be missed access to these demonstrably beneficial services.

Box 4.1a. *Brazil's National Education Plan for 1998-2008: Day Care (Ages 0-3)*

Access Goal: To expand day-care enrollments to at least a third of children 3 years or younger in the next 10 years.

- Expand the provision of day care at least 5 percent per year.
- Target poor children first.

Quality Goal: To ensure that day-care programs provide a comprehensive package of health, nutrition, and education services to children (ages 0-3), are in formats flexible enough to meet families' needs, and have higher-quality staff.

In 1 year

- Set national guidelines for day-care center infrastructure (physical plant, sanitary facilities, space requirements, food preparation and rest areas, furnishings, and educational supplies).
- Set mechanisms for the cooperative and coordinated support of ECD programs in day-care centers by the education, health, and social assistance sectors.

In 2 years

- Institute a municipal plan to bring day-care centers up to the national infrastructure standard.
- Establish a joint federal, state, and municipal program to train day-care workers in ECD.
- Establish ECD training and orientation programs in all municipalities.
- Establish on-the-job ECD training programs for day-care workers.

In 5 years

- Have all day-care centers up to the national infrastructure standard (including the provision of adequate nutrition at municipal day-care centers and programs for special-needs children).
- Have all day-care center directors with at least secondary-level ECD training.
- Hire at least one caretaker with secondary-level ECD training per 20 children in day care
- Require all day-care workers to have at least a primary education.

In 10 years

- Require all day-care center directors to have higher-level training in education and ECD.
- Place at least one caretaker with a higher degree in education per 20 children in day care.
- Establish ECD orientation programs (supported jointly by the divisions of health, education, and social assistance and by relevant NGOs in all municipalities.
- Enhance municipal programs for mothers with children ages 0-3 with multisectoral services (such as financial or legal aid, nutritional supplements) to help them through difficulties associated with poverty, domestic violence, ill health, and family disintegration.

Information, Monitoring, Quality Control Goal: To set national ECD standards and establish a municipal system for monitoring private, public, and community day-care centers.

In 1 year

- Establish an ECD information system supported by contributions from the education, health, and social service sectors.
- Set minimum educational and other service standards based on children's physical, cognitive, emotional, and social development needs.

In 3 years

- Include data on all public day-care centers in the national education statistics system.

In 5 years

- Make the observance of national standards for ECD service programs universal.
- Include data on all private day-care centers in the national education statistics system.

Source: Fujimoto-Gómez 1999.

Box 4.1b. *Brazil's National Education Plan for 1998-2008: Preschool (Ages 4-6)*

Access Goal: To achieve universal preschool enrollment.

In 1 year

- Expand public preschool enrollments, focusing on poor children, by at least 5 percent per year.
- Replace the classe de alfabetização program for disadvantaged 7-year-olds with preschool for children under age 6 and regular primary school for children 7and older.

In 5 years

- Set universal preschool enrollment for 6-year-olds as a Basic Education requirement.

In 10 years

- Increase the enrollment of 4-6 year olds from the current 40 percent to 66 percent.

Quality Goal:

In 1 year

- Set national standards for new preschool infrastructure (physical plant, sanitary requirements, furnishings, special-needs requirements, and educational supplies).
- Set national ECD standards for preschool educational curriculum and services.
- Institute a program (supported by the state and municipal governments) to bring all preschools up to the national education and service standard.
- Create state and municipal on-the-job ECD training programs to bring preschool personnel up to the minimum national staff training standard.
- Encourage community participation in the administration, maintenance, and improvement of preschools without abdicating public responsibility.
- Institute cooperative federal, state, and municipal funding for preschool food programs.

In 3 years

- Have all preschool curriculums up to the national standard.

In 5years

- Require that all preschool teachers have secondary-level ECD training.

In 10 years

- Require that preschool directors have higher-level education degrees.

Information, Monitoring, Quality Control Goal: To set national ECD standards for preschools.

In 1 year

- Establish criteria for monitoring the performance of preschool programs.
- Set minimum educational and other service standards based on children's physical, cognitive, emotional, and social development needs.

In 3 years

- Have all municipal preschool programs up to the national ECD service standards.

In 5 years

- Conduct an evaluation of preschool programs based on national performance standards.
- Ensure that all preschools are up to at least the minimum national service standard.

Source: Fujimoto-Gómez 1999.

V. Examples of Nonformal Programs in Brazil

4.9 Properly targeted, nonformal ECD programs can achieve returns as great as, or greater than, those of formal preschool. Examples of nonformal education programs are given below, followed by case studies from other countries.

(i) "Criança Maravilhosa" Program

4.10 There are approximately 615,000 children ages 0-6 in the city of Rio de Janeiro, of whom 240,000 (40 percent) are from poor families. Of the total population, about 75,000 children, most of them poor, are served by some type of municipal childcare program. These programs, however, typically offer discrete services that are not linked to other programs in an integrated approach to support the needs of children and families.

4.11 The municipality of Rio de Janeiro created the Rio Criança Maravilhosa program to respond to the needs of these poor families and to improve the quality of life, social and cognitive development, and life chances of low-income children ages 0-6 in the municipality. By refocusing on a holistic approach to child development and the integrated delivery of municipal services in the health, education, and social service sectors in the very places where families seek care (i.e., schools, crèches, and health centers), the program hopes to improve the quality of care that poor children receive, while expanding coverage of this group to 200,000. The program was developed by the Secretariats of Social Protection, Health, Education, and Labor in Rio de Janeiro, in partnership with the World Bank. Start-up activities are being funded by Brazil's National Bank of Economic and Social Development [Banco Nacional de Desenvolvimento Econômico e Social (BNDES)] and the Bernard van Leer Foundation.

4.12 The program will provide integrated services for children of low-income families from birth through the first 6 years of life. A follow-up system will enable the children's progress to be monitored up to their entry into primary school. A special fund will offer financing on a competitive basis for projects submitted by organizations in the civil society, and funding also will be provided for innovative government projects. Other important features of the program are a cross-sectoral coordination of efforts, the participation of the civil society, and the decentralization of activities through a series of local committees. In a staff development component, the program provides training for (a) staff on local committees and municipal staff who will work on the Rio Criança Maravilhosa program; (b) staff from applicant institutions on the preparation and implementation of their proposals; (c) municipal personnel who supervise staff and institutions serving poor children; and (d) staff who work directly with children, to improve their skills for treating children holistically and for integrating services.

4.13 The municipality will award grants for community projects through a demand-driven system that will promote, accept, evaluate, fund, and monitor the projects. The projects will undertake activities that respond to the target groups and kinds of activities that the municipality has defined for the program. Emphasis on quality of service and having an effective system for monitoring and evaluation supports implementation of a management information system and research to evaluate the impact of the program. Activities will be conducted by the four government departments directly involved in the program. Local committees will be linked to regional coordinating boards representing the departments.

(ii) Programa de Alimentação de Pré-escolar

4.14 One successful informal program in Brazil was the World Bank-supported PROAPE, which was based on the Centers for Education and Feeding of Preschool Children (CEAPES), an ECD experiment conducted in São Paulo. The pilot phase of PROAPE, from 1977 to 1980, tested different models of large-scale, lower-cost integrated service programs. All of the programs tested included health, nutrition, and education interventions. The initial study sample included 4,800 children ages 4-6 in the state of Pernambuco in the Northeast region.

Table 4.1. Evaluating PROAPE's returns

Assessment measure	*PROAPE*	*Non-PROAPE*
Number of Entrants		
Grade 1	22,298	22,298
Effect on School Performance		
Dropout rate (percent)		
Grade 1	7	9
Grade 2	6	6
Grade-repetition rate (percent)[a]		
Grade 2	32	43
Grade 2	21	38
Grade-completion rate (percent)[b]		
Grade 1	63	52
Grade 2	74	58
Number of Graduates		
Grade 1	14,048	11,595
Grade 2	10,396	6,725
Cost (US$)		
PROAPE program	1,036,370	—
Grade 1 education[c]	2,185,200	2,185,200
Grade 2 education[d]	1,376,700	1,136,310
Total	4,595,270	
Cost Per Grade 2 Graduate (US$)		
	442	494

a. Percentage of children still in school who failed to pass to the next grade.
b. Percentage of total entrants to the grade who pass to the next grade.
c. Estimate based on the annual cost per primary student in Nicaragua (US$98) times the number of grade 1 entrants in the sample. Grade 1 repeaters were excluded. Estimate assumes that the cost and efficiency of the educational system in Nicaragua were comparable to those in Brazil's Northeast at the time of the program.
d. Estimate based on assumed annual cost per primary student (US$98) times the number of grade 1 graduates.
Source: Didonet 1980.

4.15 PROAPE was informal, in that most staff had no certified training and none was part of a formal pay system. The program used existing administrative and physical facilities in public primary schools and high schools, depended heavily on community and parental participation, and taught the children using toys and educational materials made by parents and teachers. Three different schedules were tested: model A (daily sessions, 220 days per year), model B (sessions every other day, 130 days per year), and model C (sessions during school vacation only, 60 days per year).

4.16 On weekday mornings, groups of children ages 4-6 assembled for supervised learning and physical activities, basic health care, and a snack. One trained staff member ran the groups and was assisted, on a rotating basis, by five or six community members (usually mothers or other family members).

4.17 A 1981 evaluation conducted by the Instituto Nacional de Alimentação e Nutrição (INAN 1981) concluded that PROAPE participants benefited significantly. Some 74 percent of children in the program graduated from second grade, compared with 58 percent of a control group drawn from the same area and sharing the same background, but with no preschool experience (table 4.1). These pilots proved so successful that, by 1983, the Ministry of Education and Sports (MEC) had taken over funding for the program and expanded it to serve 876,000 children in 27 states and territories.

4.18 Another evaluation (Myers 1988) compared PROAPE results in the northeastern state of Alagoas with results achieved by other preschool alternatives. In the Alagoas program, children ages 4-6 were brought together in centers donated by the community. PROAPE provided three trained paraprofessionals (who were paid 70 percent of a minimum salary to work 3 hours a day) for every 100 children, and parents assisted the paid staff. PROAPE provided a snack, training, educational materials, supplementary food, dental treatment, vaccinations, vitamin supplements, and eye exams.

4.19 Results from the 78-day program were compared with those achieved after 2 years of formal kindergarten, 180 days of Casulo (a different alternative preschool program), and no exposure to preschool. At the end of a year, 76 percent of Casulo and 73 percent of PROAPE children passed first grade. In contrast, first-grade pass rates were 62 percent for children with formal kindergarten and 53 percent for those without preschool (table 4.2).

Table 4.2. Comparing Returns from PROAPE, Casulo, Public Kindergarten, and No Preschool

Group	PROAPE 78 days	Casulo 180 days	Kindergarten 540 days	None
Entrants				
Number	184	557	320	2,334
Percent	100	100	100	100
Effect on School Performance				
		Dropouts		
Number	34	40	29	334
Percent	18	8	9	14
		Passed[a]		
Number	134	426	201	1,247
Percent	73	76	63	53
		Failed[b]		
Number	16	91	90	755
Percent	9	16	28	33
Children Remaining at Year's End				
Number	150	517	291	2,000
Percent	82	92	91	86

a. Data from supervisors of schools with children from preschool projects in 1982.
b. Percentage of total entrants to the grade who failed to pass to the next grade.
Source: Didonet 1990, 1993.

VI. Nongovernmental Organizations Providing Early Child Development Services in Brazil

4.20 Numerous NGOs have actively supported and implemented ECD services in Brazil. Although the potential for these groups to expand their services to young children varies, NGO involvement has been a key element in encouraging community participation. There is a predominance of religious-based organizations that work with young children. The services of two NGOs are described below.

(i) Pastoral da Criança

4.21 Pastoral da Criança (Pastoral Letter to Children) is a social action agency operated by the National Conference of Brazilian Bishops (CNBB) and founded in the early 1980s. All activities are community- and family-based, and community leaders are trained to mobilize families to combat child mortality and improve the quality of their lives. The function of the leaders is to monitor pregnant women and poor children up to age 6 and to teach mothers and other family members about basic hygiene, nutrition, and education, giving particular emphasis to nutritional surveillance and overall child development. The thousands of leaders each visit about 20 nearby households, to support and monitor them.

4.22 Operating directly with families, Pastoral da Criança does not depend on any local agency. About 75 percent of its resources are managed directly by the various dioceses,

which transfer them to the parishes and communities so that they can be used to serve the poor. Pastoral da Criança produces a newspaper (115,000 copies per issue) and a weekly radio program, entitled "Viva a Vida" (Long Live Life), which is broadcast free by hundreds of stations throughout Brazil. These materials and programs are designed to train leaders, communities, and families in the organization's activities (table 4.3). To increase support for the services offered by Pastoral da Criança, two other prominent NGOs [the "Faith and Happiness: Brazil" Foundation and its legal representative, the Association Representing the Paulo Englert Movement for Popular Education (AMEPPE)] established the Brazilian Network of Information and Documentation on Childhood and Adolescence (REBIDIA). REBIDIA is intended to be a rapid and efficient information service providing information via the Internet (www.rebidia.org.br/), telephone, fax, mail, and bulletins for those responsible for formulating public policy, especially members of state or municipal bodies.

Table 4.3. *Overall Scope of Pastoral da Criança Activities, as of the First Quarter of 1999*

States (100%)	27
Dioceses in which Pastoral da Criança is active (100%)	260
Parishes in which Pastoral da Criança is active (58%)	4,649
Municipalities in which Pastoral da Criança is active (56%)	3,105
Communities monitored	28,913
Active community leaders	112,375
Active coordination, training, and monitoring teams	5,896
Average number of families monitored (per month)	960,709
Average number of children under 6 monitored (per month)	1,387,270
Average number of pregnant women monitored (per month)	67,042
Radio stations broadcasting the weekly program "Viva a Vida" [a]	1,010
Students attending literacy courses for young people and adults [b]	35,461
Alternative community projects for generating income [c]	1,366

a. The radio program "Viva a Vida" according to information received by the Diocesan Coordinating Units as of June 18, 1998.
b. Literacy projects for young people and adults, approved as of June 7, 1998.
c. Projects for mutual assistance, income generation, and contingent assistance, approved as of June 1, 1999.
Source: Monitoring and Evaluation Information Sheets on Basic Health, Nutrition, and Education Activities [Folhas de Acompanhamento e Avaliação das Ações Básicas de Saúde, Nutrição e Educação (FABS)] submitted to the National Coordinating Unit in Curitiba as of May 31, 1999.

(ii) Association Representing the Paulo Englert Movement for Popular Education

4.23 Founded in the early 1980s as the "Faith and Happiness: Brazil" Foundation's office in Belo Horizonte, AMEPPE became an independent association in 1987. Its priorities are to guarantee social rights, define and implement public policy for the defense of the rights of children and adolescents, and strengthen grassroots organizations. AMEPPE's programs are intended to achieve the following objectives: (i) Help improve the quality of services provided for children and adolescents in the state of Minas Gerais and contribute to the training of educators and specialists connected to this area; (ii) help define, implement, and evaluate public policies relating to issues concerning children and

adolescents; and (iii) organize documentation and data, publish teaching materials, and generate information relating to the organization's activities. AMEPPE's goal is to contribute to the education of children and adolescents and to improve their quality of life by providing basic and advanced training for teachers in community day-care facilities. In 1995, AMEPPE provided in-service training, courses, and workshops for 1,300 teachers and specialists in 278 day-care facilities, NGOs, and government agencies in Minas Gerais.

4.24 Educational activities are undertaken in five areas: (1) provision of schools, day-care facilities, youth centers, and programs for street children of both sexes and of projects for community development; (2) teacher training for child education; (3) documentation, research, and production of publications; (4) communications and publication of information; and (5) action on public policy.

4.25 Several mass-media projects are conducted, such as the radio program entitled "Carretel de Invenções—A Cidadania nas Ondas do Rádio" (A Cartful of Inventions—Citizenship on the Air). This educational and cultural program, which is filled with games, stories, music, plays, and items of interest concerning the lives of children, is broadcast by 102 radio stations in 17 states of Brazil. Through AMEPPE, the "Faith and Happiness: Brazil" Foundation, in partnership with Pastoral da Criança and the Esquel Group Foundation Brazil, established REBIDIA, a decentralized system for providing documentation and information on childhood and adolescence. As noted above, REBIDIA offers access through printed matter (bulletins and direct mail), electronic bulletin boards, e-mail, virtual conferences, telephone, fax, and street mail. For network users, it also promotes training on the application of the information received, to use it as an instrument of change.

VII. Examples of Early Child Development Services in Other Countries

4.26 There is mounting evidence that lower-cost, nonformal interventions, particularly those targeted to disadvantaged children, can yield measurable benefits and serve as alternatives to formal preschool programs, especially integrated programs that address health, nutrition, and ECD issues simultaneously. Described below are successful nonformal ECD interventions in Jamaica, Chile, and Turkey.

(i) Home Visiting Model in Jamaica

4.27 Several studies conducted in Jamaica (Grantham-McGregor and Desai 1975; Grantham-McGregor, Schofield, and Powell 1987; Grantham-McGregor and others 1991, 1994; Powell and Grantham-McGregor 1989; Powell, Walker, and Grantham-McGregor 1998) have shown that the cognitive development of poor children was improved significantly among those who participated in an ECD intervention delivered directly in the family's home by trained community health workers. The intervention consisted of weekly to monthly psychosocial stimulation for an hour with or without food supplementation.

4.28 In general, psychosocial stimulation at home consisted of a combination of language activity, games, songs, and crayon and paper activities. Home-made toys were taken to the home and left until the next visit, when they were exchanged for different ones. Visitors demonstrated to the mothers the use of home-made toys and taught them how to encourage optimal development of their children.

4.29 A rationale for the studies was to evaluate the feasibility of integrating psychosocial stimulation into the government's ongoing primary health care services by providing additional training to community health aides (CHAs) who already delivered health and nutritional advice to the community through home visiting. Most CHAs had not completed secondary education. They received 8 weeks of training in child development, teaching techniques, and toy making (Powell and Grantham-McGregor 1989).

4.30 Some of the authors' key conclusions on the benefits of the Jamaican home visiting interventions are summarized below:

- Poor development of children at risk can improve with relatively modest, low-cost interventions, such as home visiting. It is feasible to integrate home delivery of targeted psychosocial stimulation to children at risk into the primary health care services (Powell and Grantham-McGregor 1989).

- As the frequency of home visiting increased from none to monthly, to biweekly and weekly, the benefits increased in both degree of improvement and number of different areas of development affected (Powell and Grantham-McGregor 1989).

- Stimulation and supplementation had significant independent beneficial effects on the development of poor, malnourished children. The treatment effects were additive, and combined interventions were significantly more effective than either alone (Grantham-McGregor and others 1991).

- Poor mothers from poor homes can be helped to promote good development in their children (Powell, Walker, and Grantham-McGregor 1998).

(ii) Community-based Model in Chile: Program Get to Know Your Child

4.31 In Chile, the government recognizes and promotes early childhood education through different modalities or direct or indirect services that vary according to the age of the children, the geographic location, and the characteristics of the service provider (Chile, 1998b).

4.32 In addition to sponsoring regular preschool classrooms in formal education centers, the Ministry of Education supports several unconventional community-based programs. Among them is the Program Get to Know Your Child (Programa Conozca a su Hijo), an educational intervention initially designed to target poor mothers and children living in geographically dispersed rural areas. The program was created between 1982 and 1986 by the Department of Early Childhood Education, Center for Pedagogical

Research [Centro de Perfectionamiento, Experimentación, e Investigaciones Pedagógicas (CPEIP)]. Since 1993, the program has been expanding gradually to the whole country. It is developed and carried out with the assistance of trained female community leaders. They educate mothers, particularly those whose children do not have access to regular preschool services. The program uses available spaces in schools or other community places where mothers can meet at least once a week

4.33 Between 1994 and 1998, the Ministry of Education conducted three studies to evaluate the major providers of formal and nonformal early childhood services in Chile. Program Get to Know Your Child was one of the programs evaluated using a controlled experimental research design. Some major findings are listed below (Chile, 1998a). The benefits to children and mothers are for those participating in the program, compared with a control group.

Benefits to Children

- Had better cognitive development scores
- Were more often engaged in activities to help develop fine motor skills
- Had better language development and coordination
- Had better mathematics, reading, and writing scores in the first grade.

Benefits to Mothers

- Had better attitude, knowledge, and practices regarding childrearing, cognitive stimulation of children, and future education expectations for their children. For example, mothers read to their children and facilitated their access to books more frequently. They also recognized the importance of play activities for the cognitive development of their children.

- Demonstrated higher self-esteem and better problem-solving skills.

Conclusions

The program provides an effective alternative to formal early childhood services in rural areas where no other programs exist. The program prepares children for primary school education and improves their probability of success. Specifically, the program:

- Complemented the work of other semiformal center-based programs, such as Junta Nacional de Jardines Infantiles (JUNJI) and Fundación Nacional para el Desarrollo Integral de la Infancia (INTEGRA)

- Has generated opportunities for participation and ownership by mothers who find a venue for seeking solutions together for the challenges they face in rearing their young children

- Has been applied successfully in prisons to provide support to female prisoners with young children

- Has motivated other partnerships, such as an interagency partnership between Fondo de Solidaridad e Inversión Social (FOSIS) (Solidarity and Social Investment Fund) and Program Get to Know Your Child to provide resource management skills (postulación y autogestión de recursos) and support for mothers' groups in the development of community-based income-generating projects.

(iii) Mother Training Program in Turkey: The Turkish Early Enrichment Project

4.34 The Turkish Early Enrichment Project targeted mothers in semi-urban, low-income, squatter housing areas. All mothers in the project had similar socioeconomic and demographic characteristics, including low levels of education, low income, and rural origin. The intervention consisted of "mother training" given to a randomly selected group of mothers for 2 years (30 weeks each year) and a control group. Mother training consisted of the following two programs:

Cognitive training. This was provided through a Home Instruction Program for Preschool Youngsters developed by the Research Institute for Innovation in Education at the Hebrew University of Jerusalem. The program covered three main areas of cognitive development for 4-5 year olds: language, sensory and perceptual discrimination skills, and problem solving. The materials were supplied to the mothers on a weekly basis, 1 week at home and 1 week in a group setting. Explanations and role-playing were used to teach the mothers how to use the materials with their children. The mothers then worked with their own children on a daily basis.

Mother enrichment. At the biweekly group meetings, guided group discussions were conducted to (a) sensitize mothers to the needs of their growing child, (b) help mothers develop effective communication skills for better verbal interaction with their children, and (c) encourage and help mothers to develop a positive self-concept, empowering them to cope with problems and attend to their children's needs as well as their own.

4.35 Workers in the program were mainly trained paraprofessionals. The project trained and supervised community workers, or "mothers' aides," who provided the program to the mothers at home and helped them in the group setting. The program's staff members were not involved in any direct child-centered activity at home; only mothers trained their own children.

4.36 Assessments of the children and their families were conducted in four main areas: cognitive development, socioemotional development, family context, and day-care context. Mothers and children were evaluated 4 and 7 years after the intervention. The following results were obtained for the participating children and mothers, compared with a control group.

Outcomes for Children

- Had significantly higher scores on all tests of cognitive development [the Stanford-Binet Intelligence Test, Block Design, Children's Embedded Figures Test (CEFT), and Piagetian classification tasks]

- Had significantly better school performance (general ability, mathematics, and Turkish) over 5 years of primary school

- Were rated as less aggressive, less dependent, and having a higher self-concept

- Had significantly lower school dropout rates (14 percent versus 33 percent for the controls) at the 7-year follow-up.

Outcomes for Mothers

- Significantly improved mother–child interactions. For example, trained mothers were more attentive to their children, reported reading or telling stories to their children more, and had higher expectations for their children, especially regarding their success in school.

The mother-training program is now being used in many urban and rural areas of Turkey through the adult education centers of the Ministry of Education.

VIII. Conclusion

4.37 Brazil's policymakers, recognizing the importance of improving children's lives in their earliest years, have set ambitious goals for preschool and day-care services in the current 10-year National Education Plan (1998-2008) (Fujimoto-Gómez 1999). However, the same plan emphasizes that Brazil's first priority is better-quality elementary education for children ages 7-14. Education of adults deprived of basic learning during childhood ranks second. Early childhood services are a distant third. Therefore, the country's emphasis on expanding and improving primary education has left few resources for interventions during the early years.

4.38 Given the limited funds available for ECD services in the short term, it is important to explore alternatives to the standard public provision of these services. Results from nonformal and NGO-operated ECD programs in Brazil and other countries show that these programs are beneficial and can be highly cost-effective.

4.39 Relying on flexible formats and incurring lower administrative costs, successful nonformal and NGO-operated ECD programs provide a variety of services offered in a nonstandard way. These programs typically rely heavily on community participation and are designed to suit local needs and conditions. The range of services include activities such as improving mothers' parenting skills and improving access to early child development by bringing ECD services to children's homes.

4.40 These findings suggest that taking a new look at Brazil's early education policy, which favors center-based early childhood services to the exclusion of other models, is of value. In particular, community-based ECD services, if properly targeted, can achieve returns as great as, or greater than, the returns from formal preschool.

CHAPTER V

FINANCING PRESCHOOL AND DAY CARE

I. Introduction

5.1 Removing inequities in access to preschool and day-care services depends on the government's commitment to elimination of waste and efficient targeting. This chapter reviews the structure of ECD funding in Brazil. Adequate financing of ECD programs will determine their sustainability and effectiveness.

II. The Structure of Funding

5.2 In Brazil, the structure for financing the public education system is rooted in the Federal Constitution of 1988 (Brazil 1988), which determines the responsibilities and the minimum investments pertinent to each level of government (Fujimoto-Gómez 1999). According to Article 212, "The Union shall apply, annually, never less than 18 percent, and the states, the Federal District, and the municipalities, at least 25 percent of the tax revenues, including those resulting from transfers, in the maintenance and development of education."

5.3 The 1980s were years of progressive expansion of elementary education in the nation. However, because of scarce and poorly administered resources, this expansion was followed by a deterioration of the quality of elementary education, expressed mostly in the decay of public schools and the massive devaluation of teachers' salaries at the elementary education level.

5.4 To fight these problems, Amendment 14 of the Constitution introduced the Fund for the Development of Fundamental Education and Valorization of Teachers (FUNDEF) (Fujimoto-Gómez 1999). FUNDEF binds each state and municipality to invest at least 60 percent of the resources designated for education to elementary education. Through FUNDEF, each Brazilian child of elementary school age is guaranteed a minimum of R$315 per year. If state and municipal revenues cannot meet this minimum, the federal government is committed to make up the difference. Some states began to implement this new mechanism of financing elementary education in 1997; all states are expected to have implemented it by now.

5.5 The Constitution determines, however, that it is the municipalities' responsibility to provide early education services. This puts a double pressure on the municipalities, which have the mandate to provide both early childhood and elementary education, but are strongly oriented to give priority to the elementary level, which leaves fewer resources to support day-care and preschool services.

5.6 At least half of all Brazilian children enrolled in an early childhood service program attend publicly funded programs that are free of charge. Although some

programs in Brazil are still run by the state, municipalities have borne the major responsibility for administering public early childhood programs since 1996.

III. Where the Money Comes From

5.7 The 1988 Constitution mandates that at least 18 percent of federal tax revenues be devoted to education (Fujimoto-Gómez 1999). Education's share of state and municipal revenues is at least 25 percent, which includes a fixed percentage that the states receive from the central government and that the municipalities receive from the states. Amendment 14 to the 1988 Constitution further mandates that at least 60 percent of state and municipal funding for education be devoted to schooling at the primary level. With respect to early childhood education, municipal governments run most of the country's preschools and are responsible for supplying most of the public funding for them.

5.8 In 1995, public spending for the education of children from birth through age 6 amounted to approximately R$1.1 billion in direct expenses and R$0.9 billion in administrative costs. If school lunches are included, this figure rises to nearly R$2.0 billion. Municipal governments were responsible for paying 94 percent of the direct expenses (table 5.1). Data are not available on the proportions of the early childhood education budget designated for day-care or preschool services.

Table 5.1. *Public Spending on Early Childhood Education, 1995 (R$ Billion)*

Expenditure	*Public funding source*			
	Federal	*State*	*Municipal*	*Total*
Direct	–	0.056	1.016	1.072
Direct + indirect [a]	0.046	0.585	1.231	1.862
Direct + indirect + food program	0.047	0.608	1.296	1.951

a. Administrative expenses.
Source: IPEA 1999.

IV. Cost Per Child

5.9 In 1995, total public expenditure for the education of Brazilians ages 0-6 years was approximately R$450 per child per year—the lowest spending rate for all levels of education (table 5.2). Spending per student is 17 times higher for tertiary education than for early childhood services. Public spending on preprimary education is also lower in Brazil than in other countries at a similar level of development. In 1995, for example, Argentina's per-child investment in early education was nearly double that of Brazil's (OECD 1998).

Table 5.2. *Public Spending on Education, 1995*

Education level	*Total expenditure (R$ billion)*	*Expenditure per student (R$)*
Early childhood education (ages 0-6)	1.95	447
Primary	17.36	601
Secondary	2.50	593
Tertiary	5.26	7,502

Source: IPEA 1999.

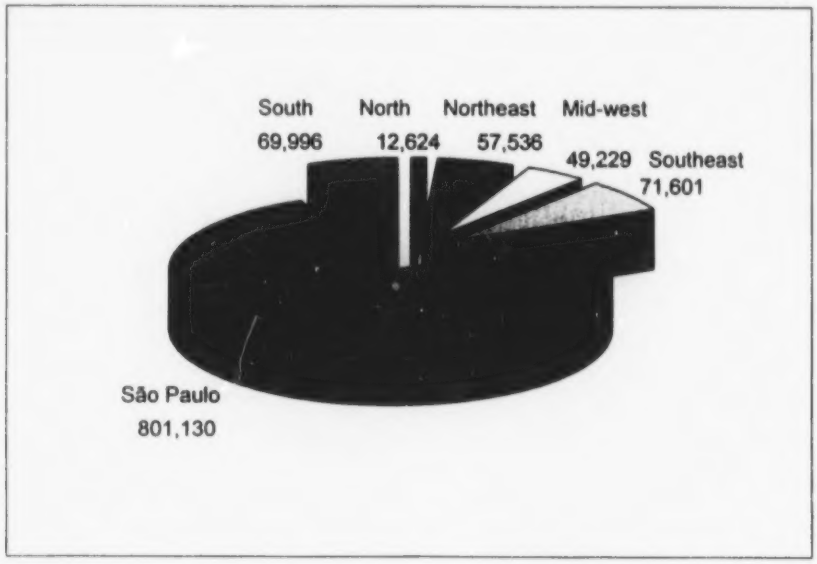
5.10 In addition to being at the bottom of the funding ladder for public education, preschool-age children receive the smallest share of most other kinds of educational support. Despite the fact that malnutrition is most dangerous during a child's early developmental years, only 13 percent of the school feeding budget in 1995 was targeted to children ages 0-6 (IPEA 1999).

V. Where the Money Is Spent

5.11 Although Brazil spent approximately R$1 billion (direct expenditure) on early childhood education in 1995, spending on early childhood services ranged from a low of R$37 to R$55 per student in the North and Northeast regions to R$173 in the South, R$324 in the Midwest, and more than R$660 in the Southeast. The state of São Paulo alone accounted for 92 percent of spending in the Southeast region and for 75 percent of the nation's total spending on early childhood services.

5.12 At present, total public spending for preschool in Brazil primarily reflects the ECD budget of a single wealthy state (figure 5.1). However, in 1995, only 5 percent of the public budget for early childhood services was spent in the Northeast, although about two-thirds of the country's poor lived in that region (IPEA 1999). These numbers demonstrate that early childhood services mean something far different for children in São Paulo than for children in other parts of Brazil.

Figure 5.1. Total Expenditure for Early Childhood Services, 1995 (R$ Million)

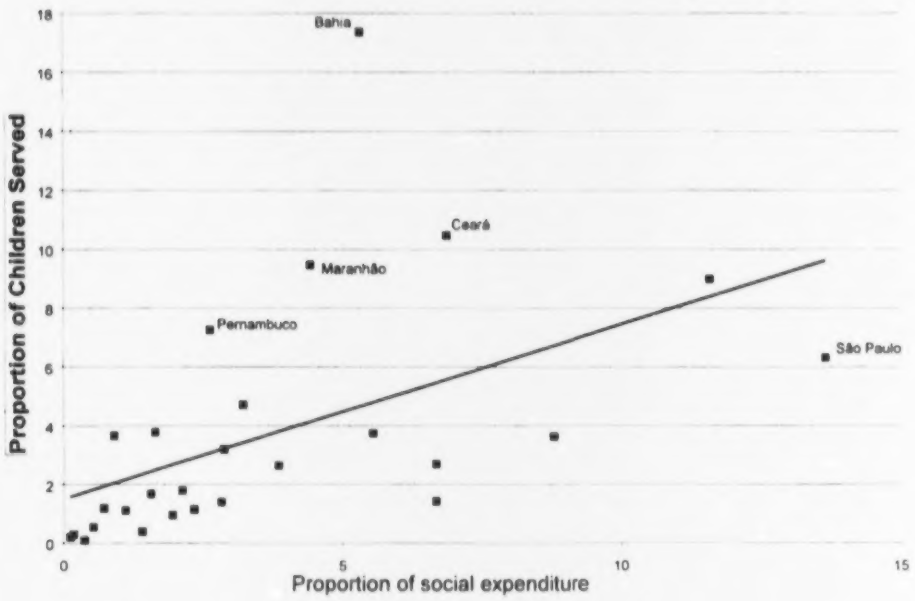


Source: Calculated with data from IPEA 1999.

5.13 Despite its relative wealth, São Paulo receives a disproportionate share of social assistance spending for children ages 0-6. Although the state accounts for only 6 percent of the poor children served by such programs, it receives almost 14 percent of the budget for these programs. In contrast, a poor state such as Bahia, which has 17 percent of the poor children under age 7 who are served by social assistance programs, receives only 5 percent of the budget (figure 5.2).

5.14 As noted, through FUNDEF, the government sets a minimum spending level of R$315 per primary school student and commits federal funds to make up any local shortfall at the elementary education (ensino fundamental) level. There has been a 50 percent increase in teachers' salaries in the Northeast, a 6 percent increase in initial enrollments, and an estimated 11 million students benefiting from the increased expenditures. No such funding mechanism is available for early childhood services, although the inequities at this level are substantial.

Figure 5.2. *Distribution of Poor Children Served and State Shares of the Social Assistance Budget, 1998 (R$240 Million)*



Source: IPEA 1999.

VI. Inefficiencies in the System

5.15 Beyond São Paulo, the municipalities' absolute level of spending on preschools is sometimes so low that it fails to cover the minimum costs for teaching materials and a school's physical facility. Waste and inefficiency within the system deplete preschool funding still further. Brazil has a deeply rooted "culture of repetition." In 1997, a fourth grader took an average of 5.4 years to complete the cycle, which implies an additional cost for 1.4 years because of repetition. The costs to educate a student in the cycle are about R$442 a year.

5.16 In 1995, more than R$500 million—30 percent of the entire budget for early childhood services—was spent on administrative activities at the state level (table 5.1). Despite these expenditures, the salaries of preschool teachers remain low. In the poor Northeast, municipal preschool teachers average R$151 per month, which is 3 times less than their counterparts in the Southeast (table 5.3).

Table 5.3. *Mean Monthly Salary of Preschool Teachers, 1997 (R$)*

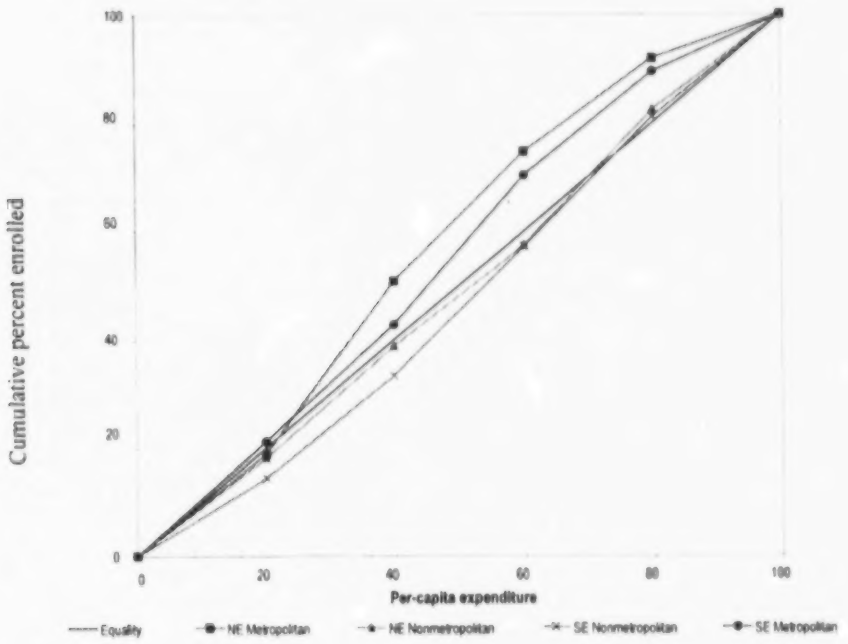
Region	School system			
	Total	State	Municipal	Private
North	322.01	454.08	207.36	445.14
Northeast	195.00	311.61	151.35	260.40
Southeast	587.00	507.33	579.35	659.74
South	464.96	499.07	409.42	561.27
Mid-west	573.64	826.64	315.15	521.90
All Brazil	419.48	496.14	365.09	506.74

Source: MEC 1997.

VII. Inequities in the System

5.17 The data from the Brazilian Living Standards Measurement Survey (PPV) (IBGE 1997c) indicate that children from all economic levels have approximately equal access to public preschools. In the metropolitan Northeast and Southeast, in fact, the distribution of schools is slightly progressive: 4-6 year olds from the poorest 40 percent of metropolitan families in the Northeast constitute 51 percent of all children enrolled in public institutions (figure 5.3).

Figure 5.3. *Cumulative Proportion of 4-6 Year Olds Enrolled in Public Institutions by Percentile Per-Capita Household Expenditure*



Source: Paci 1999.

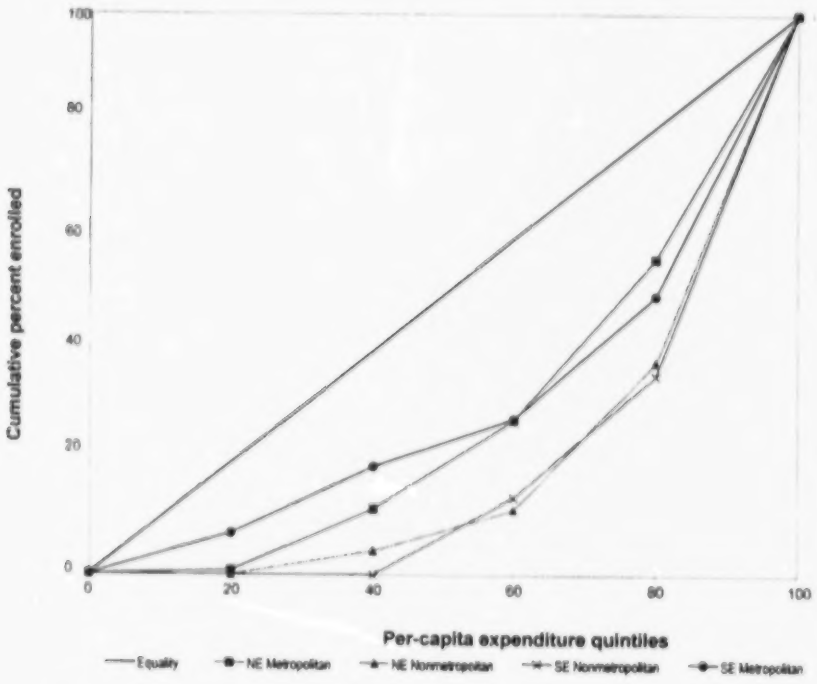
5.18 However, in areas where the number of poor children in a population is large, even-handed participation in the public system reflects the failure to target scarce public services to those who need them most, rather than equity of access, as shown by enrollment figures for children from different income groups. Although almost all (95 percent) of the 4-6 year olds in the richest fifth of the metropolitan Northeast are enrolled in some form of preschool (81 percent in private programs, 14 percent in public), only a third (33 percent) of children in the poorest fifth go to preschool or day care (1 percent in private programs, 32 percent in public).

5.19 Part of the problem stems from policymakers' effort to comply with the guarantee, stated in the 1988 Constitution, to provide free preschool services for every Brazilian child. Accordingly, public preschools accounted for 76 percent of all free childcare in Brazil in 1997, and half of all urban 6-year-olds paid nothing to attend public preschool (Paci 1999). Because many of those enrolled are not poor, however, the provision of free public preschools for all constitutes a substantial subsidy to the nonpoor.

5.20 Many better-off Brazilians send their children to free public preschools, but a sizable number have opted out of the public system altogether. Not surprisingly, therefore, most Brazilian children who attend private preschools, which generally charge

a fee, are well off. Even in the relatively rich Southeast, 4-6 year olds from the poorest 60 percent of the population account for no more than a third of private preschool enrollment, and outside the big cities, their share never rises about 14 percent (figure 5.4).

Figure 5.4. *Cumulative Proportion of 4-6 Year Olds Enrolled in Private Institutions by Percentile of Per-Capita Household Expenditure*



Source: Paci 1999.

5.21 Data from the earlier National Household Sample Survey (PNAD) (IBGE 1989) suggest that parents in Brazil, especially mothers, are willing to pay for childcare if the short-term benefits outweigh the costs. Working mothers who are richer and better educated, and therefore likely to earn more, are also more willing to pay for private preschool than are mothers who are less educated or not formally employed (Levison 1990).

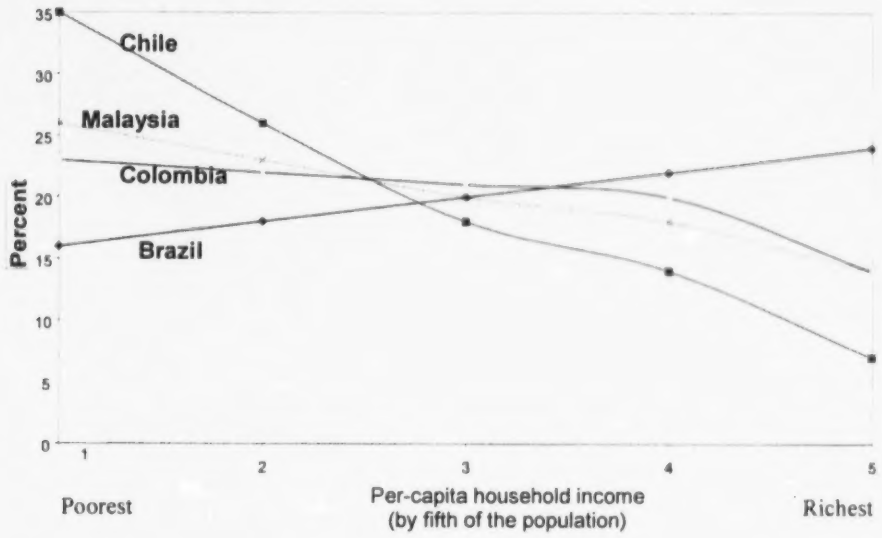
5.22 Although most funding for private preschools is derived from fees paid by parents, the federal government spent R$180 million in 1995 on subsidies to privately run preschools and day-care centers (creches conveniadas) which served approximately 1.4 million poor children (IPEA 1999). In addition to public subsidies, charitable organizations and other outside donors fund a number of preschools that provide childcare for low fees or free of charge. Yet, the PPV data (IBGE 1997c) also show that,

in fiscal 1996, private, low-fee preschools catered mainly to the top two quintiles of the population based on household expenditure.

VIII. The Need for Targeting and Comparisons with Other Countries

5.23 In Brazil today, public spending on education favors the rich. In Chile, Colombia, and Malaysia, spending on education declines as incomes rise; in Brazil, the opposite is true (figure 5.5). Moreover, scholarships for preschool go entirely to families from the richer half of the population, and even private, low-fee preschools cater mostly to children from the richer half of the population. Families that pay low fees or no fees for preschool services or that receive scholarships are likely not to be those in greatest need. This use of resources virtually guarantees that social outcomes in Brazil will not equal those achieved by similar, efficiently targeted investments, as in Malaysia and Chile (figure 5.5).

Figure 5.5. *Public Education Spending in Chile, Colombia, Malaysia, and Brazil*



Source: Adapted from World Bank 1995.

5.24 If public support for early child development is ever to help the poor, the method of allocating support needs to be revisited. New Zealand is attempting to target ECD funding more efficiently by tying public support to the individual child. Rejecting voucher plans as expensive and requiring too much government oversight, New Zealand's policymakers adopted a system of block grants to preschool providers based on a set per-child cost for each low-income child enrolled (box 5.1).

Box 5.1. *New Zealand's "Follow the Child" Plan for Early Child Development Funding*

In the 1980s, public funding for preschool in New Zealand was inadequate, inequitable, and poorly targeted, despite being governed by 26 different funding formulas. In 1989, the new *Before Five* early education plan attempted to rationalize this complex mixture of tax breaks, grants, and subsidies. The question was reopened less than a year later by a new and more conservative administration, which viewed public funding for early childhood services as an earned reward rather than an entitlement.

ECD programs in New Zealand are publicly supported, but privately run. They include home-based family day care; childcare centers for children less than age 3; free regional kindergartens for children ages 3 to 4, staffed by certified and salaried public employees; play centers run by parents and nongovernmental organizations; and preschool classes in primary schools and various ethnic preschool programs (nga kohanga reo Maori language centers, Pacific Island language centers, and Anau Ako Pasifika home-based services for Pacific Islanders).

Before Five's plan for public funding of these programs is based on a fixed-cost per low-income child, as described below.

Block grants. Since 1995, public funding has supported up to 30 hours of early childhood services per week for each eligible child. Service providers receive regular government grants (the major source of ECD funding in New Zealand) to cover salaries, wages, professional development, operational expenses, and some capital expenses. The size of these grants is calculated on a per-child hourly rate times the number of poor children enrolled.

Block grants are funded at variable rates, with free kindergartens getting an hourly rate (rate 3) that is 33 percent higher than the minimum (rate 1) and programs that meet certain specifications (a qualified staff member present at all times, a higher adult–to–child ratio) receiving a rate in between (rate 2). As of 1997, 34 percent of licensed and chartered early childhood services providers, 76 percent of home-based services, 51 percent of childcare centers, 24 percent of nga kohanga reo—but only 2 percent of parent-run playcenters—qualified for rate 2. The government is looking at ways to use the variable-rate system as an incentive to encourage improvements in the quality of ECD services provided.

Capital costs not covered by block grants. ECD programs must raise funds privately or from other branches of government to cover the refurbishment or purchase of buildings and capital equipment.

Fee subsidies. An existing social welfare subsidy program was revamped to ensure that poor children have access to early childhood services. Subsidies allow the ECD program to reduce fees for income-tested families. Since 1995, fee subsidies have been adjusted annually to reflect the consumer price index.

Discretionary grants and loans. Ministry of Education grants help defray capital costs and provide seed money for start-up programs. Loans on commercial terms support ECD services.

In 1990, the new government decided to retain most *Before Five* funding levels, but ended welfare supplements for refugees and special referrals, raised the income-qualifying level for an ECD subsidy, and cut funding for children younger than 2. This last cut had an unexpectedly large impact on parent-run and Maori-language day-care schemes. Quality and staff–to–child ratios dropped, and public fee subsidies for poor families more than doubled in a year. Yet, New Zealand increased its funding for ECD overall, with heartening results. By 1996, nearly all 4-year-olds and more than 80 percent of 3-year-olds were enrolled in some form of school. With Maori enrollments up 296 percent and Pacific Island enrollments up 332 percent from the preceding decade, one researcher asserted that "family income does not seem to be a deciding factor in children's access to good quality early childhood education" (Wylie 1996, p. 22).

Source: Meade 1999.

IX. Conclusion

5.25 Brazil's early childhood services program requires adequate public support. Despite the record of delivering consistently high social and economic returns, services targeted to children younger than age 7 still rank low on the education funding scale.

Chronic underfunding and failure to target the funds that are available to help the poor continue to undermine the efficacy of early childhood services in Brazil.

5.26 Public spending on education currently favors the rich. In countries where resources are targeted to reach the poor, spending on education declines as incomes rise; in Brazil, the opposite is true. Moreover, scholarships for preschool go entirely to families from the richer half of the population, and even private, low-fee preschools cater mostly to children from the richer half of the population. Whichever method of targeting is used, the first priority of any national ECD plan must be to ensure ECD coverage for poor children on par with their middle-income peers.

BIBLIOGRAPHY

Aldaz-Caroll, Enrique. 1999. *The Intergenerational Transmission of Poverty: Significance for Latin America and the IDB*. Washington. D.C.: Sustainable Development Department, Social Development Division, Inter-American Development Bank.

Barnett, W. Steven. 1995. Long-term Effects of Early Childhood Programs on Cognitive and School Outcomes. *The Future of Children* 5(3):25-50.

Barro, Robert J. 1991. Economic Growth in a Cross-section of Countries. *Quarterly Journal of Economics* 106(May):407-43. Quoted in N. Birdsall and R. H. Sabot, eds. 1996. *Opportunity Foregone: Education in Brazil*. Washington, D.C.: Inter-American Development Bank.

Barros, Ricardo Paes de, and David Lam. 1993. Desigualdade de Renda, Desigualdade em Educação e Escolaridade das Crianças no Brasil. *Pesquisa e Planejamento Econômico* 23(2):191-218.

Barros, Ricardo Paes de, and Rosane Silva Pinto de Mendonça. 1991. Infância e Adolescência no Brasil: as Conseqüências da Pobreza Diferenciadas por Gênero, Faixa Etária e Região de Residência. *Pesquisa e Planejamento Econômico* 21(2):355-79.

———. 1996. *Uma Análise dos Determinantes do Desempenho Educacional no Brasil*. Rio de Janeiro: Instituto de Pesquisa Econômica Aplicada (IPEA).

———. 1997a. *A Educação e o Processo de Determinação dos Salários no Nordeste Brasileiro*. Rio de Janeiro: Instituto de Pesquisa Econômica Aplicada (IPEA).

———. 1997b. *Investimento em Educação e Desenvolvimento Econômico*. Texto para Discussão. No. 525. Rio de Janeiro: Instituto de Pesquisa Econômica Aplicada (IPEA).

Barros, Ricardo, and Lauro Ramos. 1996. Temporal Evolution of the Relationship between Wages and Education of Brazilian Men. In N. Birdsall and R. H. Sabot, eds., *Opportunity Foregone: Education in Brazil*. Washington, D.C.: Inter-American Development Bank.

Barros, Ricardo Paes de, and Diana Sawyer. 1993. *Unequal Opportunity to Survive: Education and Regional Disparities in Brazil*. Texto para Discussão. No. 307. Rio de Janeiro: Instituto de Pesquisa Econômica Aplicada (IPEA).

Barros, Ricardo Paes de, José Marcio Camargo, and Rosane Silva Pinto de Mendonça. 1996. *Determinantes da Pobreza no Brasil*. Série Seminários No. 19. Rio de Janeiro: Diretoria de Pesquisa, Instituto de Pesquisa Econômica Aplicada (IPEA).

Barros, Ricardo Paes de, Rosane Silva Pinto de Mendonça, and Renata P.N. Duarte. 1995. *Bem Estar Pobreza Desigualdade de Renda: Uma Avaliação da Evolução Histórica e das Disparidades Regionais*. Documento de Apoio para o Relatório sobre o Desenvolvimento Humano no Brasil 1995. Rio de Janeiro: Instituto de Pesquisa Econômico Aplicada (IPEA).

Barros, Ricardo Paes de, Rosane Silva Pinto de Mendonça, and James Alan Shope. 1993a. *Disparidades Regionais no Ensino Brasileiro: A Questão da Qualidade*. Rio de Janeiro: Ciência Hoje.

———. 1993b. *Regional Disparities in Education within Brazil: The Role of Quality of Education*. Rio de Janeiro: Instituto de Pesquisa Econômica Aplicada (IPEA).

Bekman, Sevda. 1998. *A Fair Chance – An Evaluation of the Mother-Child Education Program*. Mother-Child Eduçation Foundation Publication 13. Istanbul, Turkey.

BENFAM (Sociedade Civil Bem-Estar Familiar no Brasil) and Programa de Pesquisas de Demografia e Saúde (DHS)/Macro International, Inc., Brasil. 1997. *Pesquisa Nacional sobre Demografia e Saúde. 1996*. Relatório Preliminar. Rio de Janeiro: BENFAM.

Birdsall, Nancy, and Richard H. Sabot, eds. 1996. *Opportunity Foregone: Education in Brazil*. Washington, D.C.: Inter-American Development Bank.

Boocock, Sarane Spence. 1995. Early Childhood Programs in Other Nations: Goals and Outcomes. *The Future of Children*. 5(3):94-114.

Brazil. 1988. *Federal Constitution of 1988*. Title VIII, chapter 3, article 205.

Carnegie Task Force on Meeting the Needs of Young Children. 1994. *Starting Points: Meeting the Needs of Our Youngest Children*. New York: Carnegie Corporation of New York.

Castañeda, Tarsicio, and Enrique Aldaz-Caroll. 1999. *The Intergenerational Transmission of Poverty: Significance for Latin America and the IDB*. Background paper presented at the Inter-American Development Bank seminar on Breaking the Poverty Cycle: Investing in Early Childhood, Paris, France, March 14.

Chile, Ministério de Educación. 1998a. *Evaluación de Programas de Educación Parvularia en Chile: Resultados y Desafios*. Santiago: Unidade de Educación Parvularia, Division de Educación Geral.

———. 1998b. *La Educación Parvularia en La Reforma: Una Contribución a la quidad*. Santiago: Unidade de Educación Parvularia, Division de Educación Geral.

Clarke-Stewart, Alison, and Cathryn L. Booth. 1999. Good Parents Still Make the Difference. Address to 165th National Meeting of the American Association for the Advancement of Science, Anaheim, California. *Science News* 155: 91B.

DATASUS (Departamento de Informática do SUS). 1999. *Informações de Saúde*. Brasília: Ministério da Saúde.

Deutsch, Ruthanne. 1998a. Does Child Care Pay? Labor Force Participation and Earnings Effects of Access to Child Care in the Favelas of Rio de Janeiro (unpublished).

———. 1998b. *How Early Childhood Interventions Can Reduce Inequality: An Overview of Recent Findings. Best Practice Study*. Washington, D.C.: Inter-American Development Bank.

Didonet, Vital. 1980. *Atendimento Integrado de Educação, Saúde, Nutrição e Envolvimento Comunitário do Pré-escolar, Através de Metodologia de Baixo Custo e Ampla Cobertura: Síntese da Exposição.* Paper presented at the World Assembly of Preschool Education, Quebec, Canada, August 28-September 2.

———. 1990. PROAPE—Projeto de Atendimento ao Pré-escolar: Lições da Experiência (unpublished).

———. 1993. Projeto de Atendimento ao Pré-escolar (PROAPE). In: Magalhães, A. R., and W. Garcia, eds., *Infância e Desenvolvimento: Desafios e Propostas.* Série IPEA. No. 140. Brasília: Instituto de Pesquisa Econômica Aplicada (IPEA).

Ferreira, Francisco, and Daniel Hinze. 1998. *Social Spending in Brazil.* Internal note on social spending data. Washington, D.C.: World Bank.

Filmer, Deon and Lant Pritchett. 1999. Educational Attainment and Enrollment around the World. *Population and Development Review* 25(1):85-120.

Fogel, Robert. 1999. Catching Up with the Economy. *The American Economic Review* 89(1):1-21.

Fujimoto-Gómez, Gaby. 1999. Boosting Poor Children's Chances, Special Program of Support for Early Child Development Programs in Brazil. Background document commissioned by the World Bank (unpublished).

Grantham-McGregor, S. M., and P. Desai. 1975. A Home-Visiting Intervention Programme with Jamaican Mothers and Children. *Developmental Medicine and Child Neurology* 17:605-13.

Grantham-McGregor, S. M., W. Schofield, and Christine Powell. 1987. Development of Severely Malnourished Children Who Received Psychosocial Stimulation: Six-Year Follow-up. *Pediatrics* 79:247-54.

Grantham-McGregor, S. M., Christine Powell, S. P. Walker, and J. H. Himes. 1991. Nutritional Supplementation, Psychosocial Stimulation, and Mental Development of Stunted Children: The Jamaican Study. *The Lancet* 338(8758):1-5.

Grantham-McGregor, S. M., C. Powell, S. Walker, S. Chang, and P. Fletcher. 1994. The Long-term Follow-up of Severely Malnourished Children Who Participated in an Intervention Program. *Child Development* 65:428-39.

Halpern, Robert, and Robert Myers. 1985. *Effects of Early Childhood Interventions on Primary School Progress and Performance in the Developing Countries.* Prepared for the Bureau for Program and Policy Coordination and United States Agency for International Development. Ypsilanti, Mich.: High/Scope Educational Research Foundation.

IBGE (Instituto Brasileiro de Geografia e Estatística). 1989. *Pesquisa Nacional por Amostra de Domicílios (PNAD) 1989.* Rio de Janeiro.

———. 1997a. *Contagem Nacional da População 1996.* Rio de Janeiro.

———. 1997b. *Pesquisa Nacional por Amostra de Domicílios (PNAD) 1997*. Rio de Janeiro.

———. 1997c. *Pesquisa sobre Padrões de Vida (PPV) 1996/97*. Rio de Janeiro.

———. 1999. *Síntese de Indicadores Sociais 1998*. Rio de Janeiro.

INAN (Instituto Nacional de Alimentação e Nutrição). 1981, 1990. Projeto de Nutrição Brasil/BIRD, Avaliação do PROAPE, Merval Rosa, p. 52. In V. Didonet. 1990. PROAPE—Projecto de Antendimento ao Pré-escolar: Lições da Experiência (unpublished).

———. 1983. *Avaliação de PROAPE/Alagoas com Enfoque na área Econômica*. Brasília: Ministério da Saúde.

IPEA (Instituto de Pesquisa Econômica Aplicada). 1999. *Uma Avaliação dos Custos e dos Benefícios da Educação Pré-escolar*. Rio de Janeiro.

Kagitçibasi, Çigdem, ed. 1996. *Family and Human Development across Cultures: The View from the Other Side*. Mahwah, N.J.: Lawrence Erlbaum Associates, Inc.

Karoly, Lynn A., Peter W. Greenwood, Susan S. Everingham, Jill Houbé, M. Rebecca Kilburn, C. Peter Rydell, Matthew Sanders, and James Chiesa, eds. 1998. *Investing in Our Children: What We Know and Don't Know about the Costs and Benefits of Early Childhood Interventions*. Santa Monica, Calif.: RAND.

Kramer, Sonia, and Maria Dolores B. Kappel. 1998. Educação da Criança de 0 a 6 Anos no Brasil. Pesquisa sobre Padrões de Vida, Primera Infância BRA95/004 (draft, September) (unpublished).

Lau, Lawrence J., Dean T. Jamison, Shucheng Liu, and Steven Rivkin. 1996. Education and Economic Growth: Some Cross-Sectional Evidence. In N. Birdsall and R.H. Sabot, eds., *Opportunity Foregone: Education in Brazil*. Washington, D.C.: Inter-American Development Bank.

Levison, Deborah. 1990. *Child Care in Metropolitan Brazil*. World Bank Internal Discussion Paper. Report No. IDP-079 (revised April 22). Washington, D.C.: World Bank.

Londoño, Juan Luis. 1996. *Poverty, Inequality and Human Capital Development in Latin America, 1950-2025*. Washington, D.C.: World Bank.

Love, John M., Peter Z. Schochet, and Alicia L. Meckstroth. 1996. *Are They in Any Real Danger? What Research Does—and Doesn't—Tell Us about Child Care Quality and Children's Well-being*. Princeton, N.J.: Mathematics Policy Research, Inc.

Martorell, Reynaldo. 1997. Undernutrition During Pregnancy and Early Childhood: Consequences for Cognitive And Behavioral Development. In M. E. Young, ed., *Early Child Development: Investing in Our Children's Future*. Proceedings of a World Bank Conference on Early Child Development: Investing in the Future, Atlanta, Georgia, April 8-9, 1996. Amsterdam: Elsevier Science B.V.

McCain, Margaret, and J. F. Mustard. 1999. *Early Years Study: Reversing the Real Brain Drain.* Toronto: The Canadian Institute for Advanced Research.

Meade, Anne. 1999. *New Zealand Funding of Early Childhood Education.* Washington, D.C.: Human Development Network, World Bank.

MEC (Ministério da Educação e do Desporto). 1996. *Anais do II Simpósio Nacional de Educação Infantil: IV Simpósio Latino-Americano de Atenção à Criança de 0 a 6 anos.* Brasília: MEC/Organização dos Estados Americanos (abstract).

———. 1997. *Censo do Professor.* Brasília: Instituto Nacional de Estudos e Pesquisas Educacionais (INEP)/MEC.

———. 1998a. *Informe Estatístico da Educação Básica: Evolução Recente das Estatísticas da Educação Básica no Brasil.* Brasília: Instituto Nacional de Estudos e Pesquisas Educacionais (INEP)/MEC.

———. 1998b. *Referencial Curricular Nacional para a Educação Infantil.* 3 vols. Brasília.

———. 1998c. *Sinopse Estatística da Educação Básica: Censo Escolar 97.* Brasília: Instituto Nacional de Estudos e Pesquisas Educacionais (INEP)/MEC.

———. 1998d. *Subsídios para Credenciamento e Funcionamento de Instituições de Educação Infantil.* 2 vols. Brasília.

Myers, Robert. 1988. Effects of Early Childhood Intervention on Primary School Progress and Performance in the Developing Countries. Paper prepared for a seminar on The Importance of Nutrition and Early Stimulation for the Education of Children in the Third World, Stockholm, Sweden, April 6-9 (unpublished).

———. 1992. *The Twelve Who Survive.* London: Routledge.

———. 1995. *The Twelve Who Survive: Strengthening Programs of Early Childhood Development in the Third World.* Ypsilanti, Mich.: High/Scope Press.

OECD (Organization for Economic Co-operation and Development), eds. 1998. *Education at a Glance—OECD Indicators.* Paris.

Olmsted, Patricia P., and David P. Weikart, eds. 1999. *The IEA (International Association for the Evaluation of Educational Achievement) Preprimary Study: Early Childhood Care and Education in 11 Countries.* Ypsilanti, Mich.: High/Scope Press.

Paci, Pierella. 1999. Where Do The Poor Fare Best? A Distributional Analysis of Regional Differences in Enrollment in Education of Brazilian Children under 6. Background paper prepared for the report Boosting Poor Children's Chances: Early Childhood Development Services for Poor Children in Brazil (draft). World Bank, Washington, D.C. (unpublished).

PAHO (Pan-American Health Organization). 1998. *Nutrition, Health, and Child Development: Research Advances and Policy Recommendations.* Washington, D.C.

PNUD (United Nations Development Program in Brazil). 1996. *Relatório sobre o Desenvolvimento Humano no Brasil*. Brasília: PNUD and Instituto de Pesquisa Econômica Aplicada.

Powell, Christine, and S. M. Grantham-McGregor. 1989. Home Visiting of Varying Frequency and Child Development. *Pediatrics* 84(1):157-64.

Powell, Christine, S. P. Walker, and S. M. Grantham-McGregor. 1998. Early Childhood Stimulation Programs in Jamaica. In *Nutrition, Health, and Child Development: Research Advances and Policy Recommendations*. Washington, D.C.: Pan-American Health Organization.

Psacharopoulous, George. 1994. Returns to Investment in Education: A Global Update. *World Development Report*. Washington, D.C.: World Bank.

Rosemberg, Fúlvia. 1999. O Estado dos Dados para Avaliar Políticas de Educação Infantil (unpublished). Fundação Carlos Chagas, São Paulo.

Rosemberg, Fúlvia, and Regina R. Pinto. 1999. Expansão da Educação Infantil e Processos de Exclusão (unpublished).

Schneider, Ronald. 1996. *Brazil: Culture and Politics in a New Industrial Powerhouse*. Colorado.

Schweinhart, Lawrence J., Helen Barnes, and David Weikart. 1993. *Significant Benefits: The High/Scope Perry Preschool Study through Age 27*. Ypsilanti, Mich: High/ Scope Press.

Shore, Rima, ed. 1997. *Rethinking the Brain: New Insights into Early Development*. New York, N.Y.: Families and Work Institute.

Sternberg, Robert, Elena Grigorenko, and Catherine Nokes. 1997. Effects of Children's Ill Health on Cognitive Development. In M. E. Young, ed., *Early Child Development: Investing in Our Children's Future*. Proceedings of a World Bank Conference on Early Child Development: Investing in the Future, Atlanta, Georgia, April 8-9, 1996. Amsterdam: Elsevier Science B.V.

UNICEF (United Nations Children's Fund). 1997. *Renda e Pobreza das Crianças no Brasil*. Cadernos de Políticas Sociais. Série Documentos para Discussão Numero 5. Brasília: UNICEF.

van der Gaag, Jacques, and Jee-Peng Tang. 1998. *The Benefits of Early Child Development Programs: An Economic Analysis*. Washington, D.C.: World Bank.

Vélez-Echavarria, Carlos Eduardo. 1997. Public Social Spending: Efficiency, Equity, and Sectoral Restructuring (to be published in Spanish). In M. Carenas and N. Lustig, eds., 1998. *Pobreza y Desigualdad en America Latina. Articulos de la Conferencia LACEA 1997*. Bogotá: Tercer Mundo.

Waiser, M. 1998. *Early Childhood Care and Development Programs in Latin America: How Much Do They Cost?* Washington, D.C.: World Bank.

World Bank. 1991. *World Development Report 1990: Poverty*. Washington, D.C.: World Bank.

World Bank. 1995. *Brazil: A Poverty Assessment*. Report No. 14323-BR. Washington, D.C.: World Bank.

World Bank. 1998a. *Social Protection Special Sector Adjustment Loan to Brazil*. Report No. P 7281 BR. Human Development Department, Latin America and the Caribbean Region. Washington, D.C.: World Bank.

World Bank. 1998b. *World Development Indicators*. Washington, D.C.: World Bank.

Wylie, C. 1996. *Five Years Old and Competent*. Wellington: New Zealand Council for Educational Research.

Young, Mary Eming. 1996. *Early Child Development: Investing in the Future*. Directions in Development. Washington, D.C.: World Bank.

Young, Mary Eming. 1997. *Early Child Development: Investing in Our Children's Future*. Proceedings of a World Bank Conference on Early Child Development: Investing in the Future, Atlanta, Georgia, April 8-9, 1996. Amsterdam: Elsevier Science B.V.